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Review

SECOND QUARTER 2002

A JOURNAL OF ECONOMIC POLICY

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THE MILKEN INSTITUTE REVIEW • SECOND QUARTER 2002

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FROM THE PRESIDENT



I joined the Milken Institute this past November because I was convinced the Institute was special – that its focus on access to capital and marketable skills is adding a fresh, important

perspective to ongoing debates over public policy. And I'm equally convinced that the *Milken Institute Review* can enrich these debates by bringing the fruits of the Institute's own efforts, along with related analysis from other distinguished economists, demographers, business leaders and journalists, to a broad, non-technical audience.

This issue offers an overview of research from our capital studies group, a compact introduction to how financial markets are being forged on the anvil of global integration. It also includes a summary of the give and take at a recent invitation-only retrospective on the savings and loan problems of the 1980s, for which the Milken Institute and UCLA's Anderson Graduate School of Management brought together academics, bankers and regulators who witnessed the traumatic events at ground level. And don't forget to take a look at Milken senior fellow Bill Frey's latest charticle. Bill is a demographer who specializes in sifting through and analyzing mountains of data from the U.S. Census in search of insights into how the nation is evolving.

Of course, much of the content of the *Review* is not homegrown and does not necessarily represent the views of the Institute or

our staff. But those of you who are fascinated by Claremont University professor Tom Willett's essay on Argentina's currency debacle might want to look at another aspect of the issue: the country's mediocre record on access to capital. A copy of the Milken Institute's latest Capital Access Index is on our Web site (www.milkeninstitute.org), as are opacity ratings for legal, corruption, accounting, enforcement and regulatory issues (produced in conjunction with PricewaterhouseCoopers).

Those who read MIT's Paul Joskow on the California electricity situation may be interested in reading the transcript of the energy panel at the Milken Institute State of the State conference last November, where Stephen Frank, president of Southern California Edison, politely butted heads with Loretta Lynch, the head of California's Public Utility Commission. And after you've perused the piece on biotechnology by Berkeley's Doug Kalish and Geoffrey Thompson, I suggest you check out our regional studies group's many and varied analyses on location issues and technology, including the article on the factors determining the location of biotechnology firms from the First Quarter 2000 issue of the *Review*. Happy reading.

A handwritten signature in dark ink, reading "Mike Klowden". The signature is fluid and cursive, with a large, stylized "M" and "K".

Mike Klowden

P.S. If you have ideas on how to improve the Institute or the *Review*, don't hesitate to write (mklowden@milkeninstitute.org).

This edition of the *Milken Institute Review*, you may notice, is being delivered a few weeks early – just in time for the 5th annual Milken Institute Global Conference in Los Angeles, held in conjunction with *Forbes Magazine* this year. If you aren't there now, you've missed the boat. But coverage of conference events can be found on the Institute's Web site (www.milkeninstitute.org). And watch for news of next year's boffo shindig on the same site.

Meanwhile, in spite of the accelerated production cycle, we've got a honey of an issue for you.

Tom Willett of the Claremont Institute of Economic Policy Studies puts the spotlight on the collapse of Argentina's decade-long experiment with set-in-stone currency exchange rates – what economists call a currency board. "Liberal economic policies spread with little resistance throughout much of Latin America during the 1990s," he notes. "But few of the political leaders and parties who initiated this change in direction are still in power. Thus, the thinking goes, a reversion to statism could occur just as rapidly."

Willett finds plenty of blame to go around. But he singles out one group, whom he calls the Fixed Rate Fundamentalists. "Argentina's problems may not be evidence that the free market model is bankrupt, as leftist intellectuals would have us believe," he says. "But there is a certain degree of truth to their condemnations. Argentina's tragedy does suggest the bankruptcy of a particular type of economic ideology that has been promulgated by a small group of economists."

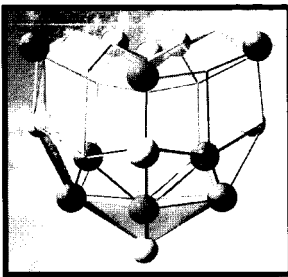
Syl Schieber, vice president of Watson Wyatt Worldwide, the pension consultants, takes a close look at the formula for compensating victims of Sept. 11. "While the distribution formula is full of major and minor inequities, the special master has limited ability to cope with them because he doesn't have sufficient funds to give more money to those with justifiable complaints," Schieber writes. "Indeed, one has to wonder if we will not soon regret the haste in setting up the September 11 Victim Compensation Fund. A program meant to take people out of the tort system, but attempting to do so on the cheap, may push people to turn to the courts instead."

Paul Joskow, the director of MIT's Center for Energy and Environmental Policy Research, points a few fingers at the California electricity crisis that subjected residents to rolling blackouts and left the Golden State with a legacy in the form of a 40 percent increase in power rates. "Even if California's wholesale market had been perfectly competitive, wholesale spot prices would have risen considerably in the spring and summer of

EDITOR'S NOTE

2000," he acknowledges. "But there is abundant evidence that during high demand periods, California's spot electricity markets were far from perfectly competitive. Several studies have demonstrated that what economists euphemistically call 'strategic behavior' by suppliers led to significant additional increases in wholesale prices."

Doug Kalish and Geoffrey Thompson of the University of California's Haas School of



Business prognosticate the likely impact of biotechnology on America's health care system. "Rapid advances in science and technology promise spectacular changes in medicine – not to

mention spectacular fortunes for investors," they write. "At the end of the bull market in 2000, 377 publicly held biotechnology companies reported \$32 billion in revenue and had a stock market capitalization of \$441 billion."

But their crystal ball is not all rosy. "The coming of age of biotechnology – notably, gene-based diagnostics and therapies – will raise new and difficult payment and privacy issues," they predict, "undermining the viability of existing business models, as well as creating opportunities for flexible enterprises."

Marsha Vande Berg, the editor of *The World Report* newsletter, explains how one of the giant German multinationals is coping with the challenges of globalism. "In Germany," she writes, "Siemens views itself as a relatively conservative blue chip; in America, as an aggressive alternative to General Electric; in China, as part of the national economic miracle."

Larry White of New York University's

Stern School of Business re-examines the hoary issue of corporate concentration in America using a fresh set of data. "The numbers show clearly that, despite the recent wave of mergers, aggregate concentration actually declined during the 1980s and early 1990s," he writes. "It did rise during the mid-1990s," he adds, "but has only recently approached the levels of the late 1980s."

Some of White's new data, incidentally, comes from *Forbes'* annual listing of the 500 largest corporations. Readers should note that the Milken Institute produces other intriguing rankings for the magazine, including the regional studies group's "best places" index and the capital studies group's global capital access index. Check the Milken Institute Web site for more info.

Speaking of the Institute's cap studies group: just what do they do? So glad you asked. In this issue, Institute researchers **Jim Barth**, **Susanne Trimbath** and **Glenn Yago** summarize their ongoing work. "As of 2001," they write, "the United States recognized 191 independent states, and their political and economic diversity are mirrored by their diversity in means of channeling savings to investment. A main focus of our research in the capital studies group at the Milken Institute is measuring that diversity and assessing its impact – especially for emerging market economies trying to structure their financial systems in ways that promote economic growth and stability."

While you've got the magazine in hand, don't forget to read this month's book excerpt from **Doug Irwin**, who explains everything Ralph Nader doesn't want you to know about the World Trade Organization. And be sure to check out Milken Institute demographer **Bill Frey's** charticle on the growing contrast between cities with and without child-centered families.

— Peter Passell

JEAN-FRANÇOIS PODEVIN

BY WILLIAM H. FREY

In the 1950s, when Ozzie and Harriet were cultural icons, the so-called family lifestyle could be found in cities as well as in the rapidly expanding suburbs. Cities also served as way stations for the young during their dating and mating years. Indeed, big-city populations were a microcosm of America.

Two things have happened to change this picture. First, childbearing is no longer the national preoccupation – less than one in four households fit the married with children mold. Second, cities have declined as the preferred residence. More than half of the population lives in the suburbs, and another fifth live outside of metropolitan areas altogether.

With the increasing diversity of household choices, large cities are assuming lifestyle niches. Some are family-friendly, some are havens for adult singles, and still others are home to unattached seniors.

FAMILY CITIES

Immigrant minorities – especially Hispanics – tend to form traditional families. Hence “Ozzie and Harriet” cities today are no longer heartland places, but California and Texas cities like Santa Ana and El Paso.

CITIES WHERE SINGLES RULE

San Francisco is home to more pet dogs than children. The City by the Bay is, in fact, a prototype for the adult boutique

city, where married-with-children families represent only one out of every eight households, compared with one out of every three in Anaheim. Seattle, Minneapolis, Washington, Boston, Atlanta and Austin also rank high on the measure with four in 10 households headed by a single person under age 65.

A major reason why these cities are relatively unattractive to the typical middle class family is their high cost of living. Many singles in these areas are not new migrants but rather aging boomers, who moved there as yuppies and watched their housing stakes soar in value.

These same cities generally have high shares of unmarried partners of persons of the same or opposite sex. Portland, Oregon tops the list on this dimension. More surprising, perhaps, Phoenix is also on this list for reasons suggested just below.

THE SENIOR SET

A growing number of senior citizens are living by themselves or with non-relative housemates, mostly in northern cities where the young have exited. Pittsburgh and St. Louis lead this list today. But as America continues to age,

BILL FREY is a senior fellow in demography at the Milken Institute.



CHARTICLE

OZZIE AND HARRIET CITIES CIRCA 2000 Cities with pop. over 250,000 ranked by percent married couples with children

1. Santa Ana, CA (42.1%)
2. Anaheim, CA (32.4%)
3. San Jose, CA (29.9)
4. El Paso, TX (29.7%)
5. Virginia Beach, VA (28.6%)
6. Riverside, CA (27.7%)
7. Arlington, TX (27.6%)
8. Anchorage, AL (27.3%)
9. Fresno, CA (25.4%)
10. Colorado Springs, CO (24.7%)

SINGLES MINGLES

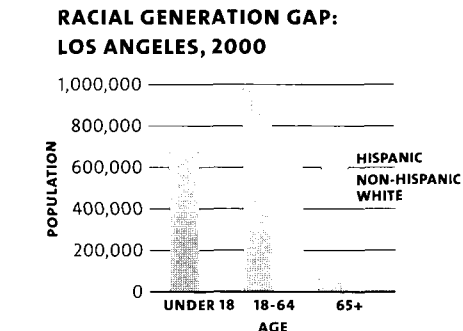
Cities with pop. over 250,000 ranked by percent of households classed as "nonfamilies" under age 65

1. Seattle, WA (46.8%)
2. Minneapolis, MN (46.4%)
3. San Francisco, CA (46.2%)
4. Washington, DC (44.0%)
5. Boston, MA (42.8%)
6. Atlanta, GA (42.3%)
7. Austin, TX (42.1%)
8. Denver, CO (40.7%)
9. Cincinnati, OH (39.9%)
10. Raleigh, NC (39.3%)

the trend will be evident in cities of all sizes in the heartland.

CLASH OF GENERATIONS

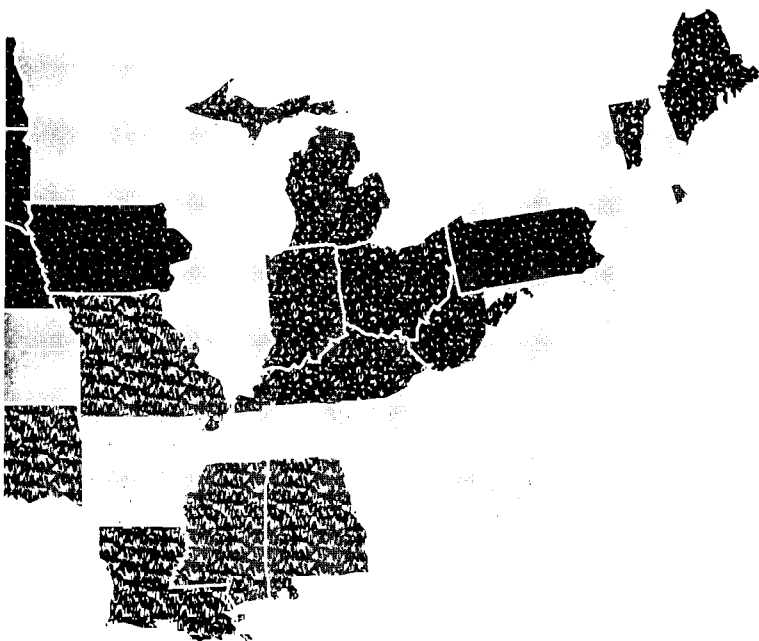
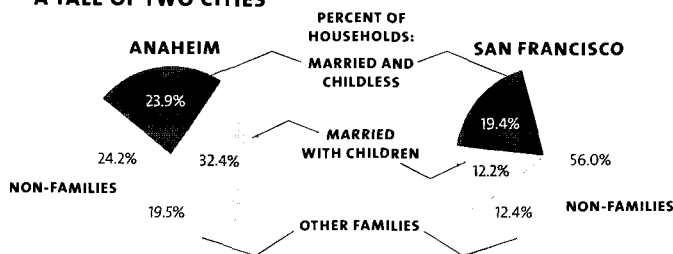
By contrast, other cities are following the pattern of Los Angeles, which is a magnet for immigrant families. Here, the young revitalize city neighborhoods, schools and consumer



markets – but also help to create a “racial generation gap” between the aging, largely white population, and the growing, youthful immigrant minority population. The gap will play out in each group’s competing demands for public goods – e.g., schools vs. libraries.

In the 1950s, suburban rings full of families surrounded almost every city. Now, new

A TALE OF TWO CITIES



LIVING IN SIN

Cities with pop. over 250,000 ranked by percent of households with unmarried partners

1. Portland, OR (8.1%)
2. Seattle, WA (7.8%)
3. Minneapolis, MN (7.8%)
4. Long Beach, CA (7.6%)
5. Oakland, CA (7.5%)
6. Phoenix, AZ (7.5%)
7. Newark, NJ (7.5%)
8. San Francisco, CA (7.5%)
9. Fresno, CA (7.4%)
10. Anchorage, AL (7.3%)

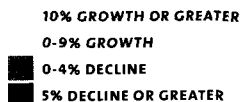
SENIOR SINGLES

Cities with pop. over 250,000 ranked by percent of households classed as "nonfamilies" aged 65 and above

1. Pittsburgh, PA (13.7%)
2. St. Louis, MO (12.9%)
3. Miami, FL (12.5%)
4. Louisville, KY (12.4%)
5. Buffalo, NY (12.1%)
6. Philadelphia, PA (11.9%)
7. Baltimore, MD (11.3%)
8. Cincinnati, OH (11.1%)
9. Cleveland, OH (11.1%)
10. Toledo, OH (11.0%)

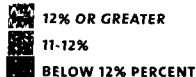
MARRIED WITH CHILDREN "MAGNETS"

States classed by percent growth in Married With Children households, 1990-2000



SPLIT-UP STATES

States classed by the percent of persons 15 and older who are either divorced or separated



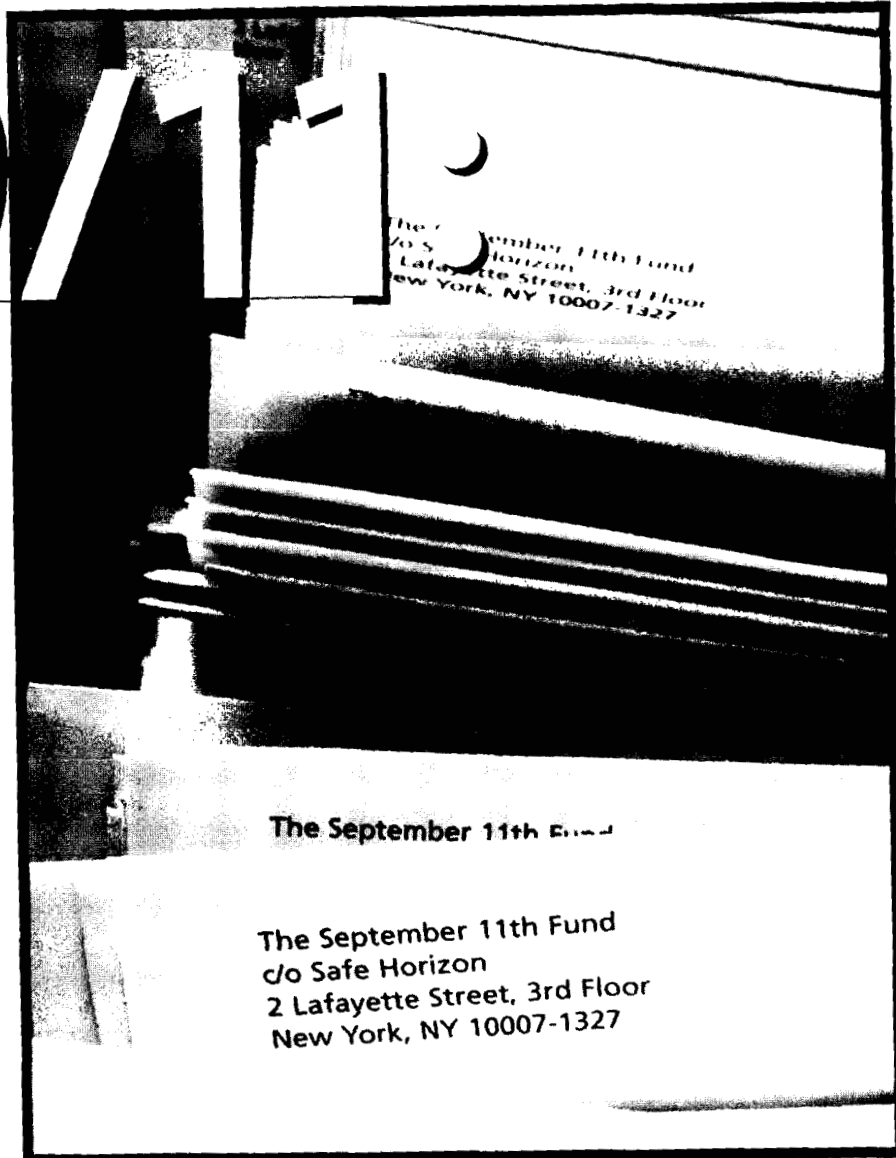
household migration patterns seem to be designating broad stretches of the nation's territory as family-oriented regions.

Eighteen states registered a decline in the number of traditional nuclear families in the 1990s, while 12 others proved to be family magnets. In California and Texas, the growth in families was tied to influxes of Hispanic

immigrants. Elsewhere, the driving force seems to be the high cost of living in congested suburbs of the Northeast and Midwest.

A state's growth in families, it should be noted, is not correlated with marital bliss. Nevada, the top family magnet state, also leads the nation in the percent of adults who are divorced or separated. **M**

9/11



Compensating the Victims

by Sylvester J. Schieber

The terrorist attacks against the World Trade Center and the Pentagon elicited unprecedented public support for the victims. Two charities alone, the Red Cross and the September 11 Fund, have collected over a billion dollars for aid to victims and their surviving dependents. The sums are so large that they have created problems for the charities in determining how to distribute the benefits.

Reflecting public sentiment, the United States Congress created its own Sept. 11 Victim Compensation Fund of 2001, a mere 11 days after the attacks. One reason, of course, was to provide relief for the victims. But plainly, another motive was to protect United Airlines and American Airlines from liabilities above the \$6 billion in insurance on the four planes that crashed in the attacks. And the rush to compensate the victims' families raises troubling questions, both about inequities in calculating the awards and about the broader issue of why the government is compensating victims in this tragedy and not others.



The fund's mandate is to compensate those injured by the aircraft crashes and the personal representatives of those killed. It is meant to be a no-fault alternative to damage suits. The compensation relates only to physical injury or death; it does not compensate for property loss. No punitive damages are to be awarded through the fund, and recipients of cash must waive their right to sue for damages.

Eligible victims include passengers in the planes and those present at the crash sites at the World Trade Center, the Pentagon and in Pennsylvania. For rescue workers, coverage extends to 96 hours from the time of the crashes. The attorney general appointed a special master, Kenneth R. Feinberg, to administer the program and make the rules for who gets how much.

Feinberg's résumé suggests why he was chosen. Not only had he been an assistant United States attorney in New York City and special counsel to the Senate Judiciary Committee, but he was also the special settlement master in the Agent Orange litigation.

Rules for the fund's operation were made on the fly in order to get money into families' hands quickly, creating considerable uncertainty about how the program

9/11 COMPENSATION

would work. On March 7, final regulations were published, clarifying some issues but leaving a number unresolved.

Awards will not be determined until a formal application is filed. However, applicants give up the right to pursue legal action for their losses against the airlines, the airports from which any of the four airplanes departed, the owners of the World Trade Center buildings, and the City of New York. Determinations of compensation are final and not subject to judicial review.

BENEFITS UNDER THE SEPT. 11 VICTIM COMPENSATION FUND

Three primary factors are being used to determine individual benefits. The first is economic loss. The approach used here is essentially the formula routinely employed in estimating economic damages from lost earnings in tort cases dealing with death or injury. The second is noneconomic loss. The last is the circumstances of the individuals, including collateral offsets for other resources available to the claimants.

Economic Loss

The initial rules last December included a five-step process for calculating economic loss beginning with the determination of pre-tax earnings, including bonuses and some benefits, from 1998 through 2000. The earnings considered in determining economic loss are capped at the 98th percentile of the earnings distribution, defined by Feinberg as \$231,000. In step two, this base earnings level

is adjusted to reflect likely future pay increases associated with inflation and promotion. The adjustment provisions in the December rules would have increased base earnings by 6.6 percent per year to age 30, 5.1 percent per year from ages 31 to 50, and 4.2 percent per year above age 50. These rates are consistent with those used in calculations of military and federal civil service pensions.

In step three, the number of years a victim would have worked is estimated, based on averages developed by the Bureau of Labor Statistics. The “present value” of lost earnings is calculated in step four, with estimated future annual earnings discounted at a rate of 5.13 percent. In step five, the estimated portion of this present value of future earnings the victim would have spent on his/her personal needs is subtracted. What’s leftover is the economic loss that would have accrued to the survivors.

The concept of economic loss used in tort cases is not widely admired by economists. Where one member of a couple dies, it is relatively common that the survivor remarries or forms another union. Has such a person truly suffered a permanent economic loss in losing a partner? While there is clearly an economic transfer from parents to young and juvenile children, savings rates in the United States are relatively low, suggesting that people typically consume at levels roughly equivalent to their income levels over their lifetimes.

The December rules for determining economic loss drew heavy criticism. While some of the comments focused on philosophical issues or the appropriateness of using standard tort methods for determining awards, many criticized the numbers used to determine actual compensation. Many addressed the level of economic loss at the upper end of the earnings distribution – some clearly argu-

SYL SCHIEBER is vice president of Watson Wyatt Worldwide. The author wishes to thank Marc Fleischaker of Arent Fox Kintner Plotkin & Kahn and Nancy Campbell of DocuMentor. Eugene Steuerle of the Urban Institute, whose wife Norma was on American Airlines Flight 77, provided valuable insights into the workings of the Victim Compensation Fund.

ing that the standard should be set much lower, others arguing there should be no earnings limit.

The final rules still base economic loss on 1998-2000 earnings unless applicants can demonstrate that other years are more representative. They also maintain the limit on earnings considered for compensation at the 98th percentile of earnings for all workers in the country, unless the eligible recipients can demonstrate this would create economic hardship. But the indexing of future earnings is being modified to be more representative of actual patterns of earnings as workers age.

The limits on earnings flags the sorts of practical problems that crop up when a program of this magnitude is rolled out on short notice. In the words of the special master, the reason for limiting the consideration of compensation at the 98th percentile level of earnings is that “multi-million dollar awards out of the public coffers are not necessary to provide [claimants] with a strong economic foundation from which to rebuild their lives.”

The December rules had stipulated this limit was \$231,000 for the base year. But my own calculation suggests the 98th percentile earnings is actually much smaller. Based on tabulations of earnings for 2000 provided by

the Office of the Actuary at the Social Security Administration, I estimate that the 98th percentile of compensation subject to the payroll tax is \$125,000. Adding 18 percent to 19 percent more to reflect average employer-funded

benefits not subject to the payroll tax only brings this number up to about \$150,000.

Why the difference between my figure and the special master’s? It appears that his staff mistakenly used adjusted gross income figures – numbers that reflect interest, dividends, rents and capital gains, as well as wages and salaries. And for the well-heeled Americans in the top 2 percent of the income distribution, this unearned income is quite substantial.

Now, there is nothing sacred about the 98th percentile limit in determining compensation. Having set it as the standard, however, and then using far higher earnings levels means that benefits at the upper end of the earnings distribution will be far more gener-

ous than what was intended.

If the victims of the Sept. 11 attacks were a typical sample of American workers, the consideration of earnings between \$150,000 and \$231,000 might not be that important, as it only covers about 1.5 percent of all wage earners. But because so many of the victims in

**TABULATION OF ALL WORKERS
WITH ALL WAGE COMPENSATION
GREATER THAN ZERO IN 2000**

WAGE INTERVALS	CUMULATIVE WORKERS (MILLIONS)	CUMULATIVE PERCENTAGE OF WORKERS
Less than \$5,000	27.39	18.50
" \$15,000	57.73	38.98
" \$25,000	84.37	56.96
" \$35,000	105.55	71.26
" \$45,000	120.17	81.14
" \$55,000	129.47	87.41
" \$65,000	135.25	91.31
" \$75,000	138.88	93.77
" \$85,000	141.25	95.37
" \$95,000	142.80	96.41
" \$105,000	143.88	97.14
" \$115,000	144.64	97.65
" \$125,000	145.20	98.04
" \$135,000	145.63	98.32
" \$145,000	145.96	98.54
" \$155,000	146.23	98.73
" \$165,000	146.45	98.87
" \$175,000	146.63	99.00
" \$185,000	146.79	99.10
" \$195,000	146.91	99.19
" \$250,000	147.36	99.49
" \$350,000	147.70	99.72
" \$450,000	147.85	99.82
" \$500,000	147.89	99.85
" \$1,000,000	148.04	99.95
" \$2,000,000	148.09	99.98
" \$3,000,000	148.10	99.99
" \$4,000,000	148.10	99.99
" \$5,000,000	148.11	100.00
TOTAL	148.11	100.00

SOURCE: Social Security Administration, Office of the Actuary, Tabulation of the Social Security Administration’s Master Earnings File as of October 13, 2001.

9/11 COMPENSATION

the World Trade Center were employed in the highly compensated financial services sector, the earnings distribution of victims is not likely to reflect the national distribution. For workers in financial services, using earnings for 1998-2000 should also prove particularly

the spouse and each dependent. The basis for the \$250,000 was that it is roughly equivalent to federal benefits for dependents of public safety officers and military personnel killed in the line of duty. For those injured by the attacks, the rules are much less precise; it appears that the special master started with

the principle that they should get some percentage of the benefit awarded to those killed.

Economic loss lends itself to mechanistic calculation. But non-economic losses are another kettle of fish. How, for example, can one value a relationship between a husband and wife or a parent and child? And how does one value a lost relationship compared to the foregone economic contribution

someone would have made to his livelihood? For surviving victims, whose losses may include suffering, inconvenience, physical impairment, mental anguish, disfigurement and loss of enjoyment of life, valuing the loss is more art than science.

The problem the special master faced in setting awards for noneconomic loss is exemplified in comments he received in response to the December interim rules. One commentator suggested he “deserved more money for pain and suffering than another because he spoke to his wife (who was in the World Trade Center) after one of the planes hit her building but before she lost her life.” But another was that “although she did not talk to her husband prior to his death, she experienced just as much (if not more) pain and suffering



advantageous, as this was the period of dot-com/telecom fever in which compensation was especially high.

Noneconomic Loss

In keeping with the tort model for determining losses, the rules for determining benefits include compensation for pain, emotional suffering, loss of enjoyment of life, and mental anguish. But the list of noneconomic loss considerations in the rules is somewhat more restricted than those spelled out in the legislation. The final rules acknowledged that the determination of any level of noneconomic losses is “inherently subjective.”

The December rules set the *presumed* noneconomic loss for people who were killed in the attacks at \$250,000, plus \$50,000 for

because she never had the opportunity to say goodbye to him.”

Some said that people trapped above the floor that the planes hit the World Trade Center should be get more than those below because the latter had a chance to escape. Others said that survivors of police officers and firefighters should get less than civilians because they knew the risks they were taking.

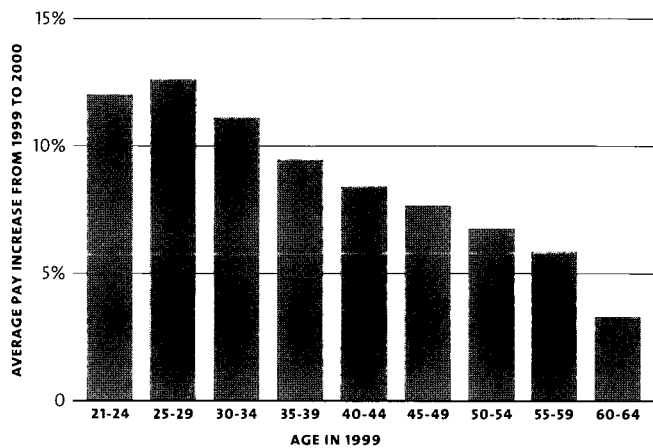
A major aggravation for critics of the tort system in personal injury cases is the wild variations in benefits awarded for pain and suffering, and punitive damages. For example, in the Korean Airlines disaster several years ago, plaintiffs received awards ranging from nothing to \$1.4 million.

By this light, the rules for Sept. 11 compensation look pretty good. All the awards for pain and suffering are likely to be relatively uniform. The one concern here is that the special master has indicated in the final rules that he will allow applicants who believe the stated rules are unfair in their cases to provide evidence of why they should be treated differently. If the special master waffles in granting noneconomic awards, the variability in the tort system may prevail here as well.

In one of his public meetings, Feinberg indicated that he had made a deal with the Office of Management and Budget that limited the total distribution from the Sept. 11 fund to \$5 billion. Given this limit on total payouts, the schedule for noneconomic benefits may have been largely determined by estimates of the money left after the awards for tangible economic losses. But determining the size of the economic award first and then

assigning the residual to noneconomic losses would effectively render the relative size of the two arbitrary. If this program is to replace the tort system for Sept. 11 victims, it would make more sense to tilt the division toward noneconomic losses.

**AVERAGE PAY INCREASE FOR WORKERS IN 80
LARGE PRIVATE SECTOR FIRMS FROM 1999 TO 2000**



SOURCE: Watson Wyatt Worldwide

The March 7 rules left the basic noneconomic award at \$250,000, but increased the additional award for spouses and dependents of deceased victims to \$100,000 each. The modification suggests the constraint on total award outlays has been relaxed. Still, there are legitimate questions about the relative size of economic and noneconomic awards.

Collateral Compensation

The law creating the fund requires that compensation for economic and noneconomic losses be reduced by the amount of collateral-source compensation to which claimants are entitled. Collateral sources include life insurance, pension funds, death-benefit programs and payments from other government funds.

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These offsets generated much criticism after the release of the December rules, some of which have been addressed in the final rules. The special master is limited here, however, because the law spells out many of the offsets.

The special master will not consider benefits distributed by charities as collateral compensation. He decided not to partly because the law was silent on the matter. But he was also concerned that charities might otherwise withhold their benefits until he had made his determinations and distributions to victims.

The treatment of life insurance as an offset to economic losses raises a number of basic equity considerations. Under the final rules, premiums or contributions made to a life insurance program to build up a tax-deferred value also will not be counted. To the extent life insurance reflects the benefit from the fund payable because of death – the portion that reflects the term-insurance benefit – it will be deducted.

People who plan responsibly for the unknown by buying life insurance do so by reducing their consumption. If the cost of the insurance reduces consumption directly as the insurance is purchased, it is a short-term cost. If it reduces other saving, it comes at the expense of precautionary or retirement savings, which reduces consumption over the long term. The survivors of those who incurred this expense will not receive credit for the sacrifice that was made in purchasing insurance. Putting it another way, those who were less prudent will reap an added reward, since they did not have to curtail consumption in the past, yet will receive an equivalent benefit to those who did.

The treatment of pensions is even more problematic. The awards are to be reduced by the present value of some defined-benefit pensions and Social Security benefits to

which survivors became entitled because of Sept. 11. On the other hand, accumulations in 401(k) plans or similar defined-contribution plans will not reduce the awards.

The final rules also indicate that if a pension benefit is uncertain, it will not be considered a collateral offset. The rules cite the specific example of survivor benefits paid to a spouse under Social Security. If the survivor receiving these benefits remarries or earns income above a certain level, the benefits are no longer payable and thus the special master considers them uncertain. It will be interesting to see how proponents of the current Social Security system who claim there is tremendous value in these benefits react to the special master's determination that they are of no value unless they have already been paid.

As for employer-sponsored pensions, benefits paid as annuities will be offset on a present-value basis, except to the extent that the value of the benefit was financed by employee contributions. The final rules are silent on this same point in the case of Social Security. Yet half the Social Security benefit is financed by employee contributions, and it appears that the full present value of annuities will be treated as collateral offsets. As for other forms of retirement savings, the special master does "not believe that Congress intended to treat a victim's savings accounts or similar investments as collateral source compensation, [and] the collateral-source offsets will not include moneys or other investments in victims' 401(k) accounts."

The different treatment of defined-benefit and defined-contribution plans is troubling on several grounds. First, many of the people with defined-benefit pensions killed on Sept. 11 were already vested in a substantial benefit whose present value may not be affected by their deaths, and thus does not seem to fit the

category of collateral compensation. Indeed, in pension plans where survivor benefits are reduced if the pensioner dies, the present value of benefits might have actually been reduced by the participant's death.

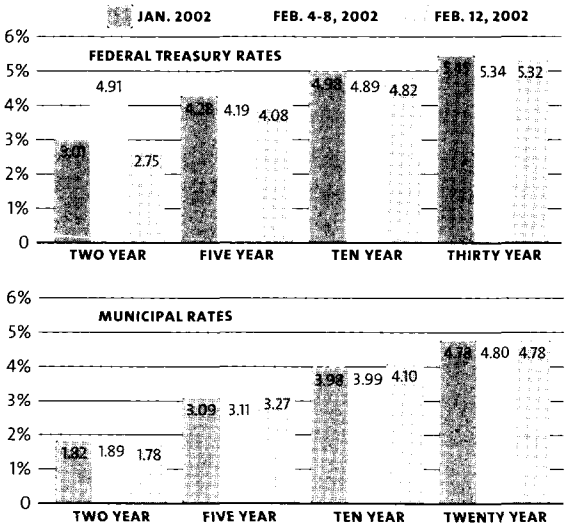
Second, economic theory suggests that workers pay for their pensions through reduced salary during their working lives. If so, the fundamental difference between funding defined-benefit plans and defined-contribution plans is that in the former the employee's contribution is taken out before the employer determines the paycheck rather than afterward. The disparate treatment thus seems unfair to people who were willing to work for less pay in order to qualify for larger pensions. And there may have been a disproportionate number of these sorts of people among the victims on Sept. 11 – specifically, government employees.

Public-sector salaries are often lower than those in the private sector, in part because public-sector workers retire with bigger benefits. This is especially true for workers in public safety and the military – two groups particularly affected by the Sept. 11 attacks. In fact, the different division of current and retirement pay amounts to a double whammy for public-sector workers lost on Sept. 11. First, the estimated economic loss in such cases will be lower than it would have been if the victims had not accepted a reduced salary in order to earn a generous pension. Second, the pensions count as collateral compensation and thus further reduce net economic compensation from the fund.

Another problematic element here is the potential inequity in accounting for employer

contributions to defined-benefit versus 401(k) plans. While the rules are silent on plans financed solely by employer contributions, I presume the benefits distributed from these would be treated similarly to defined-

FEDERAL TREASURY AND MUNICIPAL BOND RATES IN EARLY 2002



SOURCE: Reported at www.schwab.com as of February 14, 2002, but attributed to www.barra.com.

benefit pensions financed by employer contributions. But the rules are explicit that “collateral offsets will not include ... 401(k) accounts.” Many 401(k) plans include both employer and employee contributions. Why is it that employer contributions to a defined-benefit plan are considered offsets, but similar contributions to one type of defined-contribution plan are not?

I assume that if 401(k) accounts that include some assets attributable to employer contributions are excluded, IRAs will be granted the same treatment. If not, there is likely to be a loud outcry about the conflict between straightforward language of the rules

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that Congress never “intended to treat a victim’s savings account ... as collateral-source compensation” and the special master’s attempts to treat IRAs as something other than individual savings accounts.

If IRAs are treated as personal savings, the inequitable treatment of pensions will be exacerbated by the fact that most private defined-benefit plans and virtually all non-contributory profit-sharing allow lump-sum payouts to workers who leave a job. Evidence suggests that the vast majority of people take this form of benefit when it is offered. When the sum is sizeable, most people roll their distributions into IRAs. In these cases, the special master may be unable to sort out what has been accumulated through employer or employee contributions. Workers who jumped around in their careers or who had already retired from a plan with a lump-sum benefit will not be penalized by the fund rules on pensions. But those not quite eligible for retirement or those in a plan with only an annuity benefit option – as is typical of public employee plans – will lose.

One of the largest concessions for some participants in the Victim Compensation Fund is the determination by the special master that tax relief granted to Sept. 11 victims should not be treated as a collateral offset. The Victims of Terrorism Tax Relief Act of 2001 waives the income tax liability of victims for both 2001 and 2002. It also exempts \$8.5 million of a victim’s estate from federal estate tax. For someone with a taxable estate of \$2 million, the law provides \$460,650 in relief; at \$4 million the tax benefit climbs to \$1.3 million; and at \$8 million it climbs to \$3 million.

The compensation scheme is even more complicated for victims who were disabled rather than killed. Here, the program is operating on a more ad hoc basis, which is apt to

make it much more controversial. The special master will accept determinations of partial or total disability by the Social Security Administration, or other government agencies. Where the disability is partial or temporary, he will consider the extent of the disability and time away from work.

What the special master may not yet realize, however, is that the administration of disability benefits has the potential to become the tail that wags the dog. This has proven to be the case for the Social Security Administration, which administers the Disability Insurance program financed by payroll taxes and the disability portion of the Supplemental Security Income (SSI) program for the needy, aged, blind and disabled. While disability benefits will amount to slightly less than 20 percent of total annual benefits paid under Social Security and SSI this year, administering them will consume two-thirds of the Social Security Administration’s total administrative budget.

UNIQUE CHARACTER OF THE SEPT. 11 VICTIM COMPENSATION FUND

The final rules acknowledge that the program is a “unique” enterprise by government “in recognition of the special tragic circumstances” of the Sept. 11 victims. As a unique government endeavor, it raises many issues worth scrutiny. One way to view the fund is to compare it to what the government has done for victims of other attacks. In some cases, the government has been passive, fulfilling only existing programmatic obligations. In others, it has been passive-aggressive, not outwardly taking a stand against the victims’ pursuit of restitution, but inhibiting their efforts by foot-dragging. And in still others, it has actively resisted people seeking restitution.

The Radiation Exposure Compensation Program created in 1990 has been held out as

a precedent to the government's Sept. 11 fund. It was created to provide "for compassionate payments to individuals who contracted certain cancers and other serious diseases as a result of their exposure to radiation during above-ground nuclear weapons tests or as a result of their exposure to radiation during employment in underground uranium mines." Yet, while both programs are compensation funds for people who were

efforts to streamline procedures for obtaining benefits under existing programs, but the government did not fund special programs to compensate the victims or their survivors.

Another relevant comparison would be the 1985 kidnapping of Americans in Lebanon by Hezbollah. Terry Anderson, who was covering the civil war in Lebanon as the bureau chief for the Associated Press in Beirut, was taken captive and held prisoner

Our government might be faulted for not having better intelligence on terrorists or for inadequate airport security, but it was not the instrument of the damage.

harmled in large numbers by developments outside their control, the funds and the motivations behind them are starkly different in terms of the government's own role in perpetrating that harm.

If the government had no legal responsibility for injuries to people exposed to radiation during the early development of our national nuclear program, it certainly had a moral obligation to compensate them. In the Sept. 11 attacks involving the airliners here in the United States, our government might be faulted for not having better intelligence on terrorists or for inadequate airport security, but it was not the instrument of the damage. Liability in a tort sense would be extremely difficult to prove.

A more relevant comparison would be the 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City, which killed 168 people and injured 853. The victims were mostly federal workers and people doing business with government agencies. Both federal and state agencies made special

there for seven years under abominable conditions. He was finally released in December 1991. In January 1992, The Washington Post reported that Iran had financed the imprisonment of Anderson and the other Americans. In 1999, Anderson filed a \$100 million lawsuit against the Iranian government for sponsoring his imprisonment and torture.

He ultimately won a \$41 million judgment against Iran, but collecting the award was another story. To get his money, Anderson had to prevail upon Congress to pass a special law releasing Iranian funds that had been frozen by the federal government. But Anderson's going to Congress for relief in this case likely caused another set of inequities: his award took funds out of the total pool of frozen Iranian funds against which many other people had claims.

After the Oklahoma City bombing, the Department of Justice's Office for Victims of Crime released its glossy report, *Responding to Terrorism Victims*, which summarized its support to the victims of other recent terrorist

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attacks. Among the incidents were the 1998 bombings of the United States embassies in Kenya and Tanzania. In those cases, the Office for Victims of Crime provided on-site assistance to the State Department when families of the victims traveled to Washington to await the arrival of the bodies of their loved ones.

It also transferred some emergency reserve funds to the State Department to assist victims with medical and funeral expenses and transportation costs. And it sponsored a two-day briefing in Washington for the injured victims and families of those killed in the attacks. The agency later helped victims and family members identify resources and coordinate requests for crime-victim compensation in their

home states. But the government did not set up a special fund to compensate the victims for their losses.

In addition to these spectacular cases, there are literally thousands of people killed or maimed every year in this country in personal attacks. For the victims and their survivors, these experiences are just as terrorizing as the cases that receive widespread publicity. Yet, beyond criminal prosecutions, the government does relatively little to help the victims. In those special cases where the government itself might have some culpability in cases of death or injury, it generally forces the victims into the tort system to find relief.

CAUTION: SLOW DOWN

The federal government has assumed a fundamentally different role in creating the Sept.

11 Victim Compensation Fund than it has in any prior situations. While victim relief is the focus of much of the comment around this program, part of the motivation for it was limiting the liability of the airlines whose planes were commandeered on Sept. 11. The new bill extends the limitations on liability for the airlines to include the manufacturers

of the planes that crashed, the airports from which the planes took off, anyone with a property interest in the World Trade Center and New York City. Some legal experts consider this law and other legal initiatives arising out of the attacks to be thinly veiled attempts at tort reform.

One may or may not approve of this stalking horse for tort reform. But setting aside that question, the way the fund has been

structured still raises a series of policy concerns. Given the ad hoc nature of lawmaking and rulemaking here, it is little wonder that the distribution formula is full of major and minor inequities. Indeed, one has to wonder if we will not soon regret the haste in setting up the Sept. 11 Victim Compensation Fund. The internal inequities are simply compounded when one compares the relief provided in this case to what the government has (not) done for other victims.

There are already public assertions that greed is behind claimants' demands for more-generous rules. That reaction may grow louder and more negative as actual awards are processed. The special master estimates that the average benefit under this program will be \$1.8 million. His tables of presumed losses include examples of claimants who may be



AP/WIDE WORLD PHOTOS

awarded benefits of more than \$4.5 million. And if that is not enough, the expectation is that the awards will not be subject to income taxes. Meanwhile, victims from the Oklahoma City Federal Building, the Nairobi Embassy and many other cases will be further embittered because their misery was not spectacular enough to garner the attention and support that the Sept. 11 victims have received.

The Victim Compensation Fund rules

policymakers have now gotten themselves into a situation where they can only negotiate upward when they face victims of future terrorist attacks. If another attack does occur, there is a significant probability that lawmakers will have to provide relief to the victims. Yet if some of the scenarios that have been described in the major news media were to play out, they would raise questions about whether even the United States government

Policymakers have now gotten themselves into a situation where they can only negotiate upward when they face victims of future terrorist attacks.

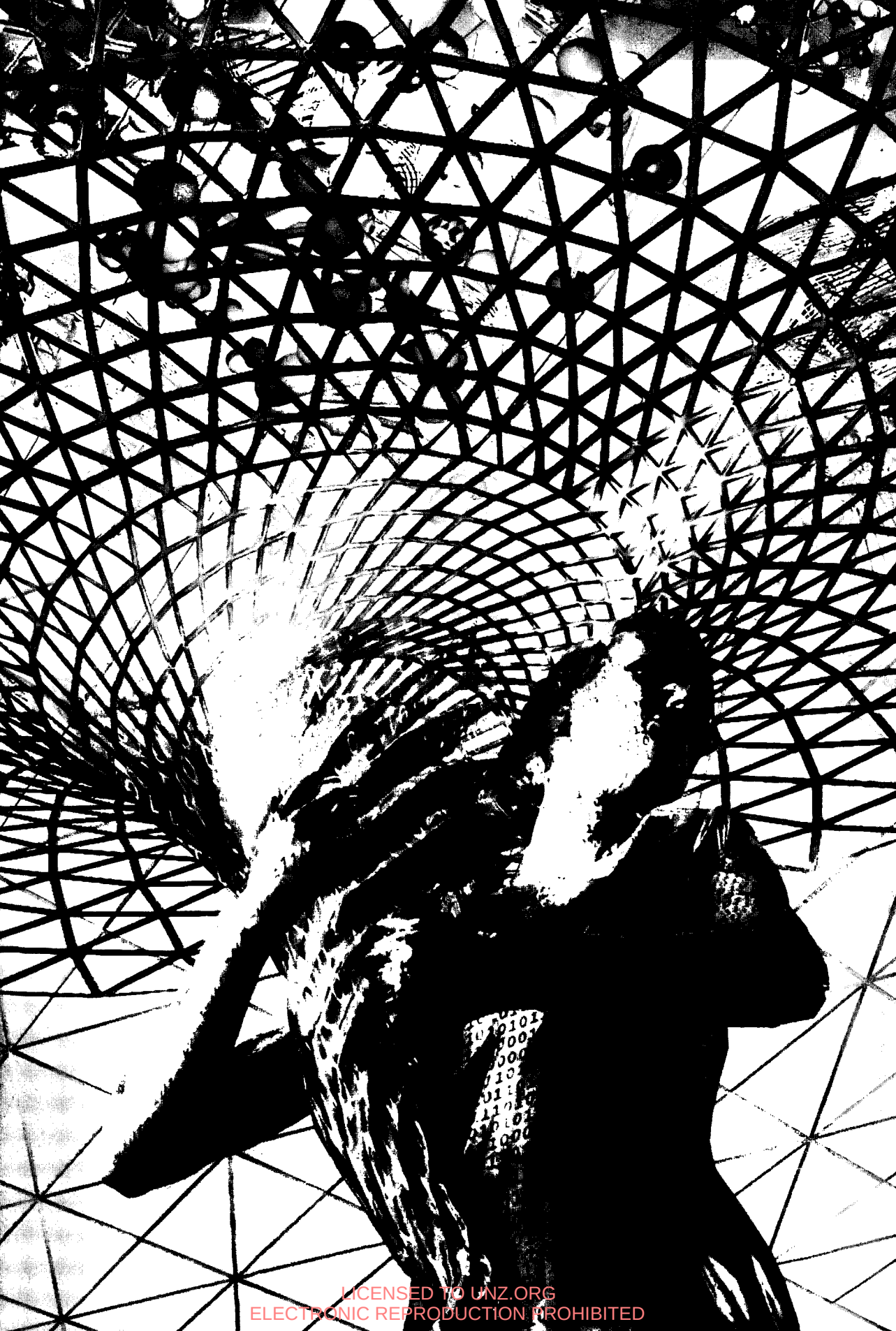
have the potential to evolve into a bigger problem than the equity issues within the group of Sept. 11 victims, or over the relative treatment of 9/11 victims compared to those in other cases of terrorism and violence. The December rules for the program set the base from which the program evolved. At the point those rules were released, there was a sense that the budget was fixed and trade-offs had to be made by reallocating benefits among the claimants. These rules had the immediate effect of law. Thus, as people came to his many public meetings laying out the inequities in his initial rules, he could not take back anything from anyone. He could only negotiate upward on benefits for people who could make a strong case that they were treated unfairly under the initial rules.

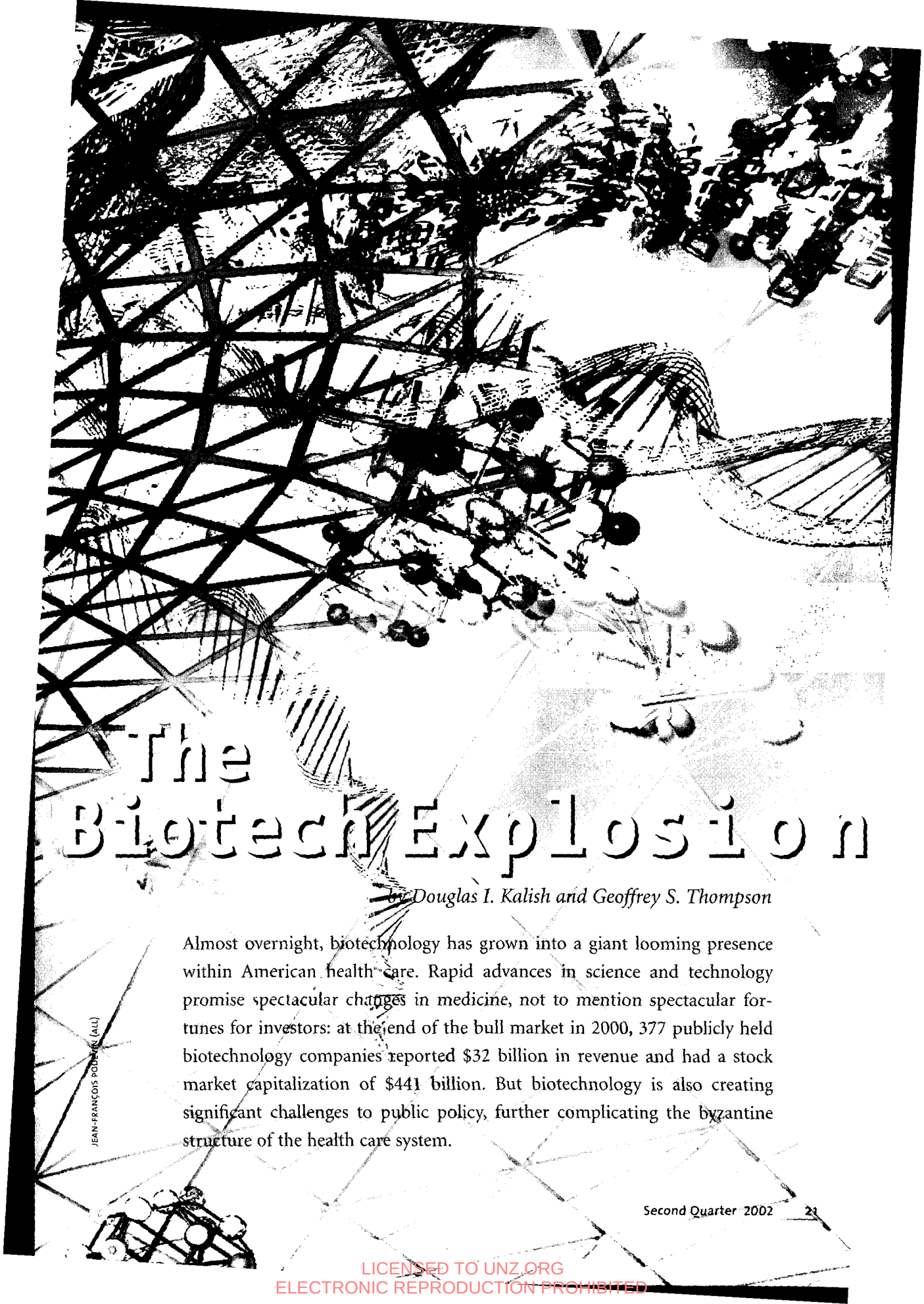
Between the December 2001 and the March 2002 rules the average presumed loss per claim climbed from \$1.6 million to \$1.8 million. In broader context, though, the victim compensation awards from the federal government climbed from zero for the Oklahoma City victims to \$1.8 million for those of Sept. 11. The issue we face is whether

could cover the cost of the victim relief required to replicate the 9/11 compensation precedent.

But what happens if the next attack ends up in the death of only 300 people instead of the estimated 3,000 who died on Sept. 11? Is the Congress now bound to provide relief? What if it is only 30? Or only 3? At what point do we step back from our public largesse? And if we provide relief to victims who are killed in an attack motivated by some foreign group, what about the next Timothy McVeigh who has some misplaced notion about how to right perceived wrongs by taking the lives of Americans? If we cover all these, what do we do in the next case of some crazed teenager who takes a gun to school, or postal worker who takes one to work?

Before we move any further down this slippery slope of victim relief, policymakers ought to step back and review what they have done. They ought to debate the appropriate role of government in insuring its citizens, foreign residents and visitors against all of the bad things that bad people can do on American soil. **M**





The Biotech Explosion

by Douglas I. Kalish and Geoffrey S. Thompson

Almost overnight, biotechnology has grown into a giant looming presence within American health care. Rapid advances in science and technology promise spectacular changes in medicine, not to mention spectacular fortunes for investors: at the end of the bull market in 2000, 377 publicly held biotechnology companies reported \$32 billion in revenue and had a stock market capitalization of \$441 billion. But biotechnology is also creating significant challenges to public policy, further complicating the byzantine structure of the health care system.

JEAN-FRANÇOIS POUDRIER (ILL.)

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Washington projects that by 2010 health expenditures will account for 16 percent of gross domestic product – an average of \$8,700 per person each year – straining a system already burdened by conflicting incentives and inconsistent goals. Meanwhile, the coming of age of biotechnology – notably, gene-based diagnostics and therapies – will raise new and difficult payment and privacy issues, undermining the viability of existing business models as well as creating opportunities for flexible enterprises.

Predicting which technologies will make it out of the lab is exceptionally difficult. However, it is certain that advances in understanding the genetic basis of disease will significantly increase the number and efficacy of both diagnostic tools and therapies. And this flood of innovation will affect the cost and delivery of services. Here, we offer some predictions about how this medical-economic drama will play out.

BIOTECH WILL SHARPLY INCREASE THE EFFICACY OF DIAGNOSTICS

An estimated \$30 billion to \$45 billion is spent annually on diagnostic laboratory services, and the gene-based testing component is growing at an annual rate of 25 percent. What's more, diagnostics are often the tail that wags the dog: though testing represents just 2 to 4 percent of total health expenditures, the results influence perhaps 70 percent of treatment decisions.

While drug therapies based on genetic information hog the headlines, molecular

diagnostics that identify disease from an individual's genetic profile are a necessary precursor – and one subject to less regulatory oversight since they are generally noninvasive. If biotech delivers on the promise of treating genetically based diseases, it will also deliver the means to identify individuals who carry defective DNA.

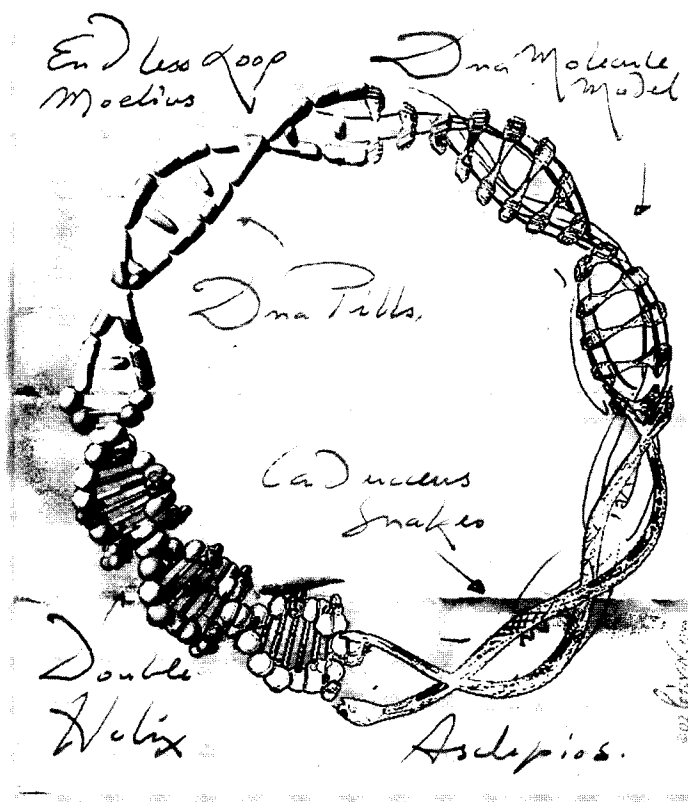
Gene-based testing will propel the diagnostics industry as diagnostics and therapy converge. Many drug therapies today are effective for only a subset of the population. For example, Genentech has developed a drug, Herceptin, specifically for women with breast cancer who overproduce a gene product called HER-2.

Treatment with Herceptin provides no benefit for women whose breast cancer is attributable to other causes and in fact can generate dangerous side effects. At the end of last year, the Food and Drug Administration recommended the use of a gene-detection test that identifies women with the HER-2 gene, targeting a therapy to a genetic profile for the first time. Many other genetic diagnostic tests are in the works.

At-home (and at-the-mall) testing and diagnosis will lead the charge. The success of home-testing kits for HIV and hepatitis C, in no small part fueled by patients' ability to retrieve lab results directly (and anonymously) over the Internet, has emboldened diagnostic laboratories to reach for broader markets.

Aging baby boomers are more educated and affluent than previous generations – and unlikely to take no for an answer when it relates to a medical intervention that promises a longer existence and better quality of life. Already, for-profit providers are offering expensive diagnostic services like full-torso MRI scans to health-conscious consumers with deep pockets.

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PHARMACIES WILL EXPAND DIRECT CONSUMER RELATIONSHIPS

Though the number of pharmacies has remained stable since 1992, prescriptions have grown 150 percent and revenues are up 270 percent. In addition to the traditional role of verifying prescriptions, checking drug interactions and ensuring proper dosage, pharmacists are being asked to administer insurance benefits – and in some cases to help patients manage their diseases.

Pharmacists have the opportunity to move up the value chain, offering more skilled services for more money. And drug makers are accelerating this process through aggressive direct-to-consumer marketing. Since 1997, when the government relaxed restrictions on drug advertising, billions of dollars have been spent to help Americans “discover” their untreated ailments and the latest drugs to tame them. Advertisements on the evening

national news are dominated by invitations to ask a doctor about medications for high cholesterol, osteoporosis and acid reflux. With the drug companies’ complicity, pharmacists can become the human face of direct-to-consumer marketing.

HEALTH CARE WILL SHIFT FROM LABOR-INTENSIVE (PROVIDERS) TO CAPITAL-INTENSIVE (DRUGS)

From 1997 through 2000, the number of prescriptions for the elderly grew 7.1 percent, while this segment’s total drug spending increased 18.5 percent; for the nonelderly the number of prescriptions grew 4.7 percent with total outlays increasing by 15.6 percent. High growth rates in drug outlays will undoubtedly continue, if only because of the rapid aging of the population.

New medical products and technologies are driving America’s rapid increase in health

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care spending, in which capital-intensive medical products are being systematically substituted for labor-intensive services. This shift has generated serious questions about the cost efficiency of these new medical technologies – specifically, whether there are incentives in place to ensure that only cost-effective technologies are adopted and used.

NEW DRUG DEVELOPMENT INCREASES THE LOAD ON REGULATORS, BUT LITTLE WILL BE DONE ABOUT IT

Since a new therapy cannot be sold without Food and Drug Administration approval, the speed, efficiency and expertise of the FDA has long been subject to critical scrutiny. Enabled by the 1992 Prescription Drug User Fee Act and 1997 FDA Modernization Act, the FDA has instituted a faster, more efficient drug review process. Average approval times decreased from 30.3 months in 1991 to 12.6 months in 1999. However, in 2000 the trend reversed, and the approval process increased to 17.6 months. This has generated concern among manufacturers, since recent biotechnology discoveries are expected to increase the number of drugs that need approval.

A user-fee system in which pharmaceutical companies seeking drug approval pay for the process has enabled the FDA to add 600 reviewers. However, if even a small fraction of the 30,000 to 50,000 genes in the human genome yield candidates for therapeutics or diagnostic tests requiring approval, the system will be overwhelmed.

The approval sequence is just one link in the drug discovery and development chain under FDA control. Getting the average drug from laboratory to patient now requires 14 years and costs in excess of \$500 million. While defenders of the current system argue that this deliberate process is the price of sus-

taining the FDA's fine safety record, the high cost of drug development and regulatory approval is generally seen as a major limitation to innovation.

The rigidity and high cost of regulation discriminate against smaller companies and drive the industry's focus toward "blockbuster drugs." While the adverse consequences of stifling innovation and perpetuating monopolies are widely acknowledged, the FDA development and approval process remains arcane and obscure to most. For this reason, radical reform of the FDA is unlikely to be supported by society at large, particularly if such reform is seen as benefiting large pharmaceutical companies.

DRUG DEVELOPMENT IS A BOON FOR ACADEMIC MEDICAL CENTERS AND CLINICAL RESEARCH ORGANIZATIONS

In addition to increasing the burden on regulators, the projected increase in new therapeutics will tax drug developers' capacity to test drugs. Most clinical research is performed in academic medical centers, the minority of hospital complexes that are affiliated with medical schools and dedicated to clinical research. Such centers have been financially strained because they are typically high-cost health-care providers in an environment of declining reimbursement by insurers. Academic medical centers say the cost-cutting tactics used by managed care organizations inhibit clinical trials and slow innovation. This inhibition can be direct, through restrictions on patients' participation in clinical trials, or indirect, through refusal to reimburse providers for unproven therapies.

Academic medical centers will continue to face strong competitive pressure as managed care steers patients to lower-cost community providers. However, with the huge potential for new therapies generated by biotechnolo-

gy, academic medical centers will be well positioned to replace their money-losing operations in primary care with clinical trial services. Research by Richard Retting of the RAND Corporation suggests that the ability of academic medical centers to conduct clinical trials – and thus drive competitive pressures – turns on their ability to identify patients for trials and to maintain sophisticated patient tracking systems. Recognizing this, a new industry of clinical research organiza-

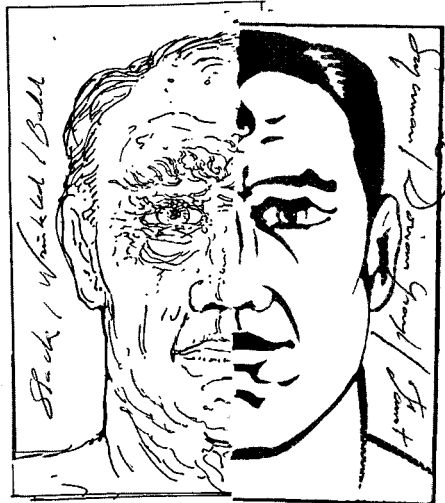
By the same token, demand for “lifestyle” drugs on the part of age-anxious baby boomers is growing. Antibaldness drugs generated \$180 million in sales in 1998, the antiwrinkle drug Botox earned \$90 million in sales in 1997, and Viagra’s sales approached \$800 million in its first year. One industry analyst projected that with more than \$20 billion now being invested in developing drugs for lifestyle conditions, annual sales of lifestyle drugs will soon reach \$11 billion. Since most

With more than \$20 billion now being invested in developing drugs for lifestyle conditions, annual sales will soon reach \$11 billion.

tions has emerged to enroll patients and manage clinical trials. As specialists in the design and implementation of drug tests, clinical research organizations can leverage their investments in information technology over dozens of drug trials and tens of thousands of patients.

OVER-THE-COUNTER AND LIFESTYLE THERAPEUTICS WILL PROLIFERATE

The demand for over-the-counter therapies will grow considerably as the population ages. More than eight out of every 10 Americans take an over-the-counter pain reliever in any six-month period, and one-third take pain relievers more than eight times a month. Drug makers are adjusting their marketing strategies accordingly, shifting prescription drugs with waning patent lives into the consumer market. The major pharmaceutical companies may find that close alliances with – or even outright acquisition of – retail pharmacy networks or distributors will give them more control over the over-the-counter value chain.



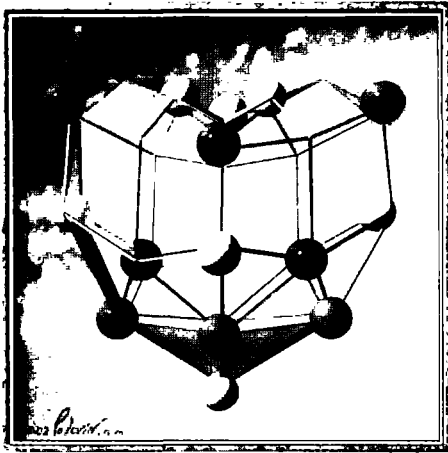
lifestyle drugs aren’t covered by insurance, a large portion of the discretionary health care dollar will be directed toward them.

TREATING DISEASES’ CAUSES INSTEAD OF SYMPTOMS WILL SHARPLY INCREASE LONGEVITY

Over the last century, the causes of mortality and morbidity have shifted from infectious to

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chronic disease, which now cause 7 deaths in 10. Even deaths attributed to infection are often the indirect result of an underlying chronic condition – for example, chronically bedridden patients are susceptible to respiratory failure.



This shift is both the cause and effect of increased life expectancy, which has risen by about 12 years since 1940. Currently, 34 million adults are aged 65 years or older. That number is expected to jump to 70 million – one in every five Americans – by 2030.

Biotechnology promises to treat the underlying disease, not just the symptoms. For example, cystic fibrosis is a devastating disease caused by a genetic defect that affects the operation of ion pumps in cells, resulting in gastric and respiratory symptoms. Today, therapy for cystic fibrosis treats only the symptoms. Sufferers usually succumb to the cumulative effects of the disease and its therapies in their early 20s.

Genetic therapies under development will deliver normal copies of the defective gene to the appropriate cells, enabling them to make working versions of the ion pumps and effectively curing the disease. The promise of gene replacement therapy is far from being realized. But it holds out the prospect of true cures for chronic diseases, including cancer and heart disease. The eventual result will be a decrease in genetically related chronic illness and a concomitant increase in life expectancy.

DRUG COMPANIES ARE SHIFTING TO DISEASE MANAGEMENT

The growing complexity and information collection requirements of more personalized diagnostics and therapies will encourage wholesalers and pharmaceutical manufacturers to diversify their business models. These companies are moving toward one-stop shopping for individualized disease information, patient support and management, and health products and supplies.

For example, Pfizer hosts a Web site (www.pfizerforliving.com) providing interactive health tools and health care information on topics including diet and exercise, allergies, high cholesterol, diabetes, high blood pressure and osteoporosis. The site offers software tools for calculating target body weight and heart rate, a nutrition analyzer and a personalized medication log. Biogen recently signed a deal with Salu to create a clinical information Web site to reach neurologists and their patients with multiple sclerosis, providing them with a variety of information. Roche Diagnostics offers stand-alone diabetes management software for physicians. Not only do disease management programs “lock in” patients over the long term, they also offer the opportunity of additional revenue from associated products and services.

GENETIC INFORMATION ALLOWS GREATER DISCRIMINATION BETWEEN THE HEALTHY AND SICK

Third-party payers traditionally minimize risk by pooling the health care expenses of groups. Genetic testing and tailored therapies disrupt the insurance pooling paradigm because they provide much more reliable information on the likelihood of disease and cure at the individual level.

depend on the averaging of costs over the group. In the absence of strong legislation or social pressure to buttress “community” premium rating, individuals’ insurance premiums will reflect their genetic profiles.

The enthusiasm for genetic testing as a means for discovering the biological causes of disease and for advancing individualized therapies has been tempered with ethical and practical concerns over privacy. A 1998 study

The promise of gene replacement therapy holds out the prospect of true cures for chronic diseases, including cancer and heart disease.

Such information should benefit payers in two ways. First, knowing a patient’s genetic profile will allow the payer to determine the most clinically effective and the most cost effective courses of treatment. Where a therapeutic benefit generates net savings for the payer – say, by substituting for hospital stays – this therapy is likely to become part of the benefit package. However, where the savings are uncertain or take many years to materialize, benefits are less likely to be included even if the clinical advantages are unambiguous. Preventative therapies are even less likely to be covered because typical rates of employee turnover means that little of the future savings will accrue to employers or payers.

Second, genetic testing will allow private managed care organizations to charge higher premiums to those more likely to develop a disease or to avoid insuring those persons altogether. Managed care organizations will gain the practical ability to price coverage on an individual basis because they will be able to predict accurately who is a “bad” risk. Uncovering an individual’s genetic propensity to illness poses a real threat to those who

by the National Center for Genome Resources reported that 85 percent of adults believed employers should not have access to a patient’s genetic information and 63 percent indicated they would not undergo genetic testing if they knew that insurers or employers could gain access to the results. To address similar concerns, Britain recently enacted a five-year moratorium on the use of genetic information by insurance companies.

The response in the United States has been more measured. In 1996 Congress passed the Health Insurance Portability and Accountability Act, which introduced new standards on the use and transmission of patient-specific health information. The goal was to prevent abuse of such information and to increase public confidence that health data would be used prudently. The act prohibits insurance companies from using genetic information to deny or limit insurance coverage for individuals enrolled in a group plan, prohibits charging a higher premium to one member of a group and prohibits considering patients’ genetic information as a pre-existing condition without a supporting diagnosis.

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However, the National Human Genome Research Institute points out that many gaps remain. Following are things the Health Insurance Portability and Accountability Act does not do:

- Prohibit the use of genetic information as a basis for raising health insurance premiums.
- Limit the collection of genetic information by insurers and prohibit insurers from requiring an individual to take a genetic test.
- Limit the disclosure of genetic information by insurers.
- Apply to individual health insurers except if covered by the portability provision.

The act's approach is to rely on personal consent, where the individual rather than the government determines access to genetic information. Individuals can give consent to genetic testing when it offers a legitimate health benefit, but can prohibit the use of that information for any other purpose. Patients can opt-in to therapy and opt-out of discrimination at the same time.

But critics note that most requests for genetic testing come at moments when patients find it nearly impossible to say no – say, when applying for health coverage. The debate over genetic testing is in its infancy, but any American solution will probably include some mixture of government oversight and individual control.

While the concern about genetic privacy is growing, opposition remains largely unorganized and dispersed compared with the focused clout of the organizations that support the increased availability of genetic information. The collection and use of personal genetic information will be slow at the start as the ethical and logistical safeguards are reinforced. But powerful industry interests will stop legislation that jeopardizes its availability. The resulting potential for misuse

of information will dissuade some people from pursuing gene testing and therapy until it begins to produce clear personal benefits. Ultimately, privacy concerns are likely to be traded away to the clinical advantages of genetic profiling.

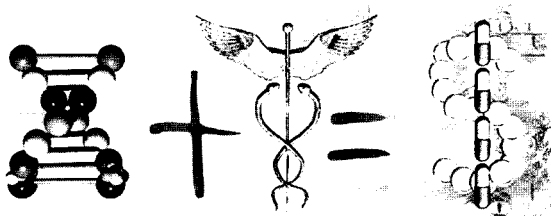
BIOTECHNOLOGY MAY CUT DRUG DEVELOPMENT COSTS, BUT WON'T LOWER PRICES

In 1999, *Fortune* ranked the pharmaceutical industry as the most profitable in America, with a net profit margin of 18.6 percent, compared with the Fortune 500 median of 5 percent. The industry has long defended its profitability as the driving force behind the risky and expensive process of developing and commercializing new therapies.

Research-based pharmaceutical companies spent some \$30 billion – 18 percent of revenue – on research and development in 2001, compared with an average of 4 percent across all industries. These outlays reflect the quintupling in recent decades of the total costs of discovering and developing new drugs. Fewer than 2 percent of pharmaceuticals in development actually become commercial medicines, and the payoffs from those that do make it are a long time in coming.

Biotechnology will undoubtedly increase the number of new drugs, but may not reduce their average price. At first, new information on genes and biology will do little to reduce the number of “failed” research and development activities, perpetuating companies’ rationale for high prices. Eventually, biotechnology promises to increase the productivity of drug discovery and development efforts, and to lower required economic returns, by reducing the risks inherent in research and development. To date, though, no company has suggested that biotech tools have decreased the cost of drug development.

Without legislated price controls or a drastic increase in the negotiating power of payers or consumers, premium prices on new pharmaceuticals will presumably reflect their value to consumers.



Moreover, prices are not based on cost (even if they are justified that way), but on what the traffic will bear. Without legislated price controls or a drastic increase in the negotiating power of payers or consumers, premium prices on new pharmaceuticals (and medical engineering miracles such as artificial organs) will presumably reflect their value to consumers.

Even if biotechnology results in highly efficient drug discovery and patient targeting, the specificity of new therapies may work against profitability. Advances in molecular diagnostics will allow for the specific targeting of pharmaceuticals, which will increase their clinical efficacy. However, molecular diagnostics will reduce the overall demand for individual drugs by shrinking the pool of patients for whom the chemical will be prescribed. Instead of marketing, say, a new anti-cholesterol drug to tens of millions, it might be sold only to a few hundred thousand who would show clinical benefits because they inherited a gene producing a faulty enzyme.

Even as pharmaceutical companies attempt to lower the costs of drug development and testing, they will be aggressively pursuing strategies to protect and extend their product portfolios. Typically, development and clinical testing absorbs a significant

portion of the time in which the producer maintains a patent monopoly. Patents are awarded for a total of 20 years. But because of the time required for development and clinical testing, the average effective patent life of a new drug is considerably shorter.

Every month of a monopoly on a blockbuster drug can be worth hundreds of millions of dollars. Since drug patents are granted for specific uses, producers are actively looking for new uses of their existing drugs. Under current law, drug companies can get three years of additional exclusive marketing when they demonstrate that a drug can treat another disease. A manufacturer agreeing to test the product on children gains an additional six months of exclusivity.

One anticipated benefit from the human genome project is a more complete understanding of the interactions of gene products. One drug, perhaps in combination with other therapies, could be used to treat a variety of diseases. Expect the pharmaceutical companies to use biotechnology at both ends of the manufacturing process: to decrease cost and increase the number of candidate drugs, and to find novel uses that extend their monopolies over drugs in production.

BIOTECHNOLOGY

THE GOVERNMENT WILL MAINTAIN PRESSURE TO LOWER DRUG PRICES IN SOME MARKETS

Another factor complicating the drug price equation is the impact of government insurance. For Americans over 65 and for certain disabled persons, Medicare pays for drugs received as a part of a hospital service. Medicaid, which is partially financed by the federal government but administered by indi-

drugs. Florida, with the third largest Medicaid program (behind New York and California), faces a \$650 million deficit in its Medicaid budget. It recently imposed an extremely restrictive “formulary” – a list of drugs approved for reimbursement. To make the list, manufacturers had to promise price cuts of 6 percent on top of the previously mandated 19 percent discount. Several other states, including Louisiana, Maine and Michigan, are proposing similar restrictions.

If managed care organizations support price controls or other sorts of government intervention, they run the risk of creating a monster.

vidual states, pays for health care services and products for the indigent. Many states choose to cover prescription drugs for those eligible for Medicaid. In 1999, 39 million persons were enrolled in Medicare and another 32 million were enrolled in Medicaid.

In countries with universal government health insurance, governments have been able to leverage their huge spending volume and status as monopoly buyers, exacting discounts from pharmaceutical manufacturers or simply legislating price ceilings. The ability to price their products at a premium in the United States has helped the pharmaceutical companies remain very profitable. However, cost pressures on government insurance programs could effectively eliminate the United States as a high-profit sanctuary.

In the absence of federal action, a number of states are already moving to control spending on pharmaceuticals. Soaring Medicaid drug costs and heightened media attention to pharmaceutical prices gave many state and localities the political will to enact purchasing legislation aimed at lowering outlays for

The pharmaceutical industry has challenged the legality of these cost-containment measures, claiming that states do not have the authority to restrict patient access to prescription drugs. Most controls have been limited to lowering prices for those eligible for Medicaid and the uninsured. However, baby boomers, who use a growing proportion of drugs produced, will probably support legislators who pursue price controls.

Proposals to extend prescription drug coverage to Medicare, the largest single payer for health services, could have huge ramifications on demand, prices and profits. Drug manufacturers’ biggest concern is the de facto price controls that Medicare would place on existing and new therapies, if it were to extend coverage to out-of-hospital use. Another serious concern for the drug companies is that benefit coverage, payment and delivery decisions could become politicized and (further) bureaucratized. Getting a new therapy approved for sale is already a decade-long process costing millions of dollars. Getting a new therapy approved for government reim-

bursement could add years to the process. For these reasons, pharmaceutical companies will oppose any Medicare drug coverage and get their allies, like the managed-care lobby, to follow suit. They will be greatly helped by the looming insolvency of Medicare.

Managed care organizations provide health coverage to millions and have a strong financial interest in lowering pharmaceutical expenditures. Their cost-control strategies and benefit coverage decisions can have a significant impact on the type, price and quantity of therapies provided. Managed care organizations have thus far been relatively unsuccessful in reining in the soaring pharmaceutical costs – indeed, the managed-care and pharmaceutical industries have often joined forces to limit government regulation. However, the coalition seems to be breaking down under the tension created by rising pharmaceutical costs.

If managed care organizations support price controls or other sorts of government intervention, they run the risk of creating a monster. As for-profit companies whose return is dependent on setting their own premiums, they have a vested interest in keeping the health care market free of price regulation. Managed care organizations face a difficult balancing act, supporting government initiatives that serve their direct interests while maintaining the political coalition favoring minimal government interference. Hence, they will quietly support certain legislation aimed at curbing pharmaceutical spending – but very quietly, indeed.

MANAGED CARE ORGANIZATIONS WILL BE THE “BAD GUYS” IN THE DRUG-PRICE BATTLE

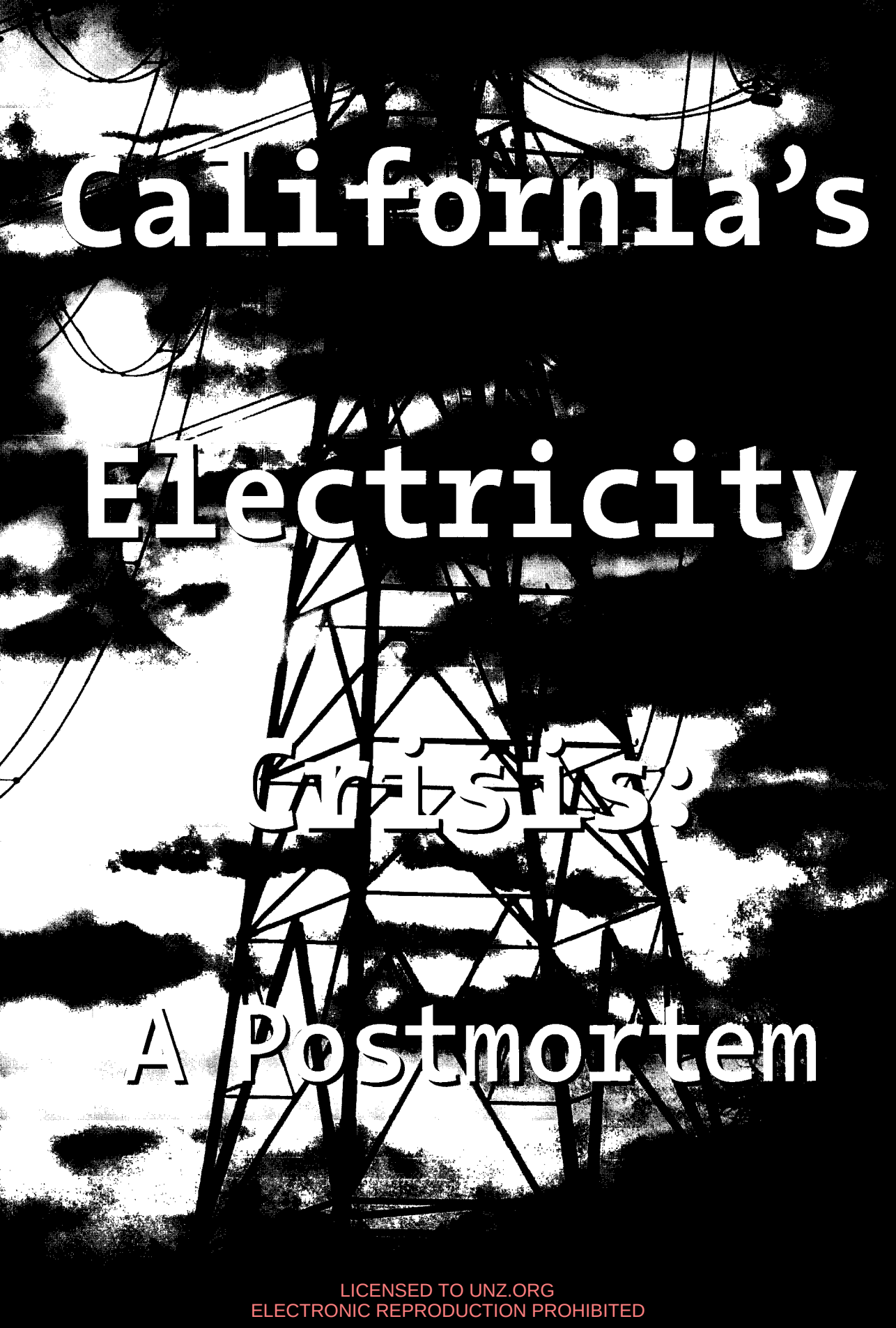
Prescription drugs are popular and expensive, and payers are in the unwelcome position of deciding which ones will be covered. Man-

aged care organizations will increase their efforts to slow their expanding outlays for drugs by streamlining coverage, stepping up efforts to extract discounts from manufacturers and service providers, and adopting more sophisticated arguments for nonpayment. A combination of direct-to-consumer advertising and the historically strained relationships with physicians will force managed care organizations to wear the black hat. Lobbying efforts, legal actions and heated negotiations will be more common as managed care organizations fight against the high prices of new pharmaceutical products.

CONCLUSIONS

Thirty years ago, the information technology market was transformed by technologies that enabled a complete computer to be built on a single silicon chip. Today's microprocessor and software technologies are dominated by a few companies; all of the first-generation minicomputer manufacturers – and most of the mainframe manufacturers – have disappeared. The potential for realignment in the health care industry is no less significant.

The interactions between drug manufacturers and payers, payers and providers, and providers and patients will evolve as biotechnology and information technology reduce the information asymmetry on which the relationships are currently based. The flexibility and adaptability of health care business models will be challenged by the rapid pace of biotechnological change. Firm predictions about the future health care landscape are difficult because they depend on science as yet undiscovered and will be tempered by the political process and social demands. But health care professionals who don't understand that biotechnology will be the dominant force in the health care industry risk becoming dinosaurs. 



California's

Electricity

Crisis?

A Postmortem

by Paul L. Joskow

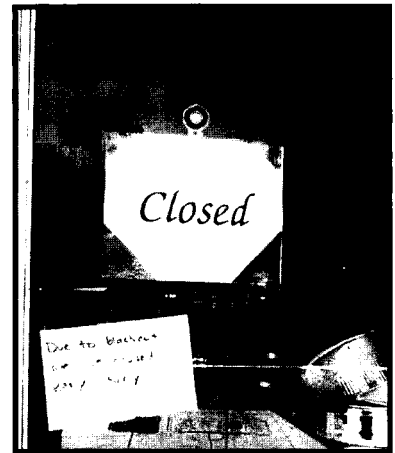
In April 1998, California initiated an ambitious program to bring retail and wholesale competition to its electricity sector. Those pressing for the sweeping changes believed the program would lead to lower consumer prices, a host of innovative retail services, improved performance from existing generating plants and massive investment in clean new ones. Most of the rhetoric focused on lower prices and better service. Jeffrey Skilling, then president and chief operating officer of Enron, told officials that consumers would save nearly \$9 billion a year with “deregulation.”

Both the California Legislature and Pete Wilson, the governor at the time, embraced the initiative. California, the thinking went, would be at the vanguard of a movement to transform a tired old industry composed of imperfectly regulated monopolies into one that tapped the innovation and discipline of the free market.

The experiment now lies in ruins. Rather than becoming an example of how to transform the industry, it has become an international symbol of the dangers inherent in deregulation. The state’s two largest utilities became insolvent in early 2001 and stopped paying for power. Supply interruptions soon followed, and the state had to intervene to purchase power to keep the lights on, spending \$12 billion in just a few months and committing Sacramento to another \$40 billion of long-term contracts with unregulated electricity suppliers. Retail consumers now pay about 40 percent more for electricity than they did before the program began.

Little of the promised clean, cheap new generating capacity was completed before mid-2001. And just as consumer prices were increased in June 2001 to help to pay for the costs of power purchased by the state, wholesale prices began to fall drastically. The state is now stuck with obligations to pay \$40 billion for electricity with a likely market value of \$20 billion.

Other states and other countries have initiated similar programs, often with initial stumbles. But none blundered into a mess comparable to California’s. Herewith, my take on what went wrong and what can be learned from the experience.



ELECTRICITY CRISIS

For nearly a century, California's electricity industry was organized around three private regulated companies, which owned and operated generation, transmission and distribution facilities for all consumers in their exclusive franchise areas. The Pacific Gas & Electric Company (PG&E), the Southern California Edison Company (SCE) and the San Diego Gas & Electric Company (SDG&E) account for about three-quarters of the electricity sold to retail consumers in the state. (The rest is supplied by municipal utilities, irrigation districts and public water agencies, which did not participate in deregulation.)

The three utilities' prices and service obligations were set by the California Public Utilities Commission (CPUC). While the three owned generating plants to supply most of their retail customers' needs, they did purchase significant amounts of power from utilities in other western states, as well as from Canada and Mexico. These wholesale transactions and associated transmission arrangements are regulated by the Federal Energy Regulatory Commission (FERC).

Responding to complaints from industrial customers, who paid much more for power than competitors in neighboring states, the CPUC began a review of California's electricity industry in 1993. Everything from the high costs of nuclear power to expensive long-term contracts with independent power suppliers to excess generating capacity was attributed to California's dependence on regulated, vertically integrated monopolies. Not surprisingly, there was broad agreement that something had to change. Also not surprisingly, there was no consensus about how.

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In April 1994, the CPUC proposed what was then viewed as radical reform. Production from existing generating plants and new plants would be deregulated and the power would be sold in a competitive wholesale market. Transmission, distribution and related network operating functions would continue to be regulated monopolies. However, these services would be sold separately from the power produced by competing unregulated generating plants, enabling consumers to buy "transportation" service at regulated prices while choosing their retail electric service suppliers (ESPs) in a competitive market. ESPs would acquire power in the new competitive wholesale markets, reselling it to consumers along with other services – energy management services, telephone service on power lines and the like. This vision was heavily influenced by reforms carried out in England and Wales in 1990.

The CPUC's proposal met opposition from several quarters. First, the utilities were concerned that retail competition would make it impossible for them to recover both their past investments in nuclear power plants and the costs of state-mandated contracts with cogenerators and renewable energy suppliers. Wholesale market prices were expected to be in the range of \$25 to \$30 per megawatt-hour, while the utilities' regulated costs of generation were about \$65/Mwh. The difference between the "regulatory value" of these generation sources and their expected market value was potential "stranded cost," and the utilities argued that they were owed a means of recovering these costs. Industrial consumers naturally opposed recovery because stranded costs stood between them and much lower energy prices.

There were also heated debates about market design. The CPUC's original proposal would have created wholesale markets similar

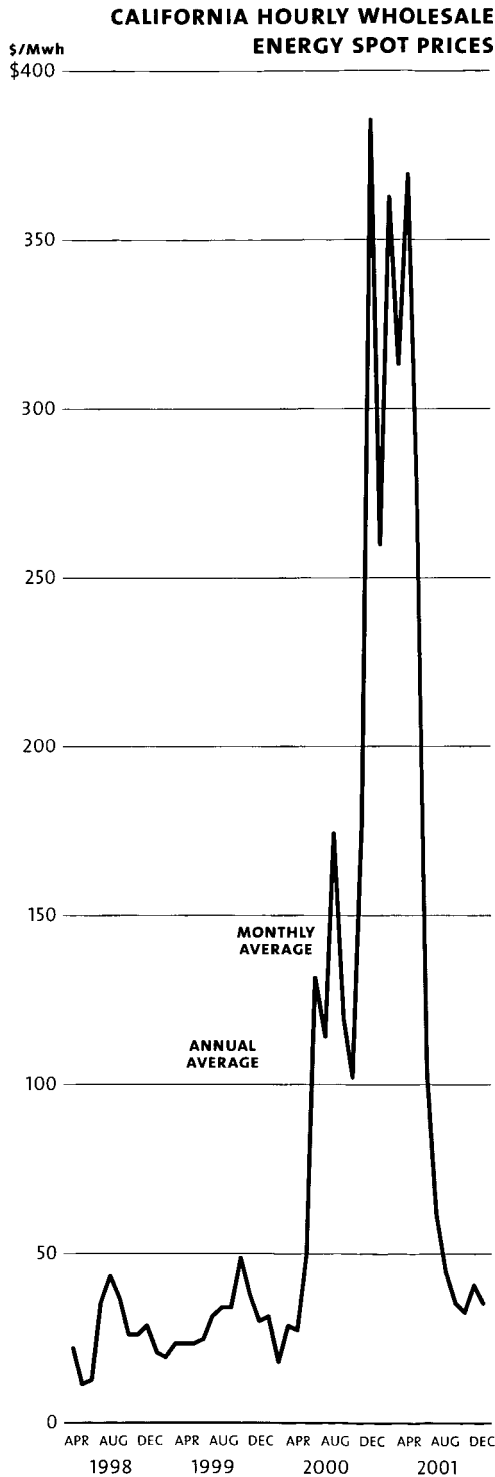
to those in England. Following the experience there, the plan would have phased in retail competition over several years, starting with the largest customers and working gradually to small businesses and households.

Marketers (led by Enron) and industrial consumers opposed replicating the British model, arguing that it gave too much control to a quasi-public operating authority. They wanted a decentralized market, where the role of the system operator was limited, and the opportunities for buyers and sellers to wheel and deal were maximized. Small customers supported the CPUC's wholesale market model, but opposed the phase-in of retail competition because they were concerned that it would leave small customers with a disproportionate share of stranded costs. On the other hand, they wanted the big utilities to be obligated to provide regulated "default service" as a safety net, in case competition did not work as expected.

THE RESTRUCTURING PROGRAM

The CPUC came up with a plan in early 1996 that embodied numerous compromises to accommodate the various interest groups. Later that year, the California Legislature passed a restructuring law that largely followed the plan, but included a number of refinements. The details of the restructuring program are complex; here, I will focus on aspects that played an important role in the system's later collapse.

The privately owned utilities (prophetically called IOUs – investor-owned utilities) were directed to help to create two new non-profit transmission network and wholesale market institutions, and to work with all "stakeholders" to design the operating rules for the associated wholesale markets. The first was the California Independent System Operator (ISO), which would operate the



ELECTRICITY CRISIS

transmission networks owned by the three major utilities and would be responsible for running the energy balancing, ancillary service and congestion management markets needed to maintain reliability. The second was the California Power Exchange (PX), which would run hour-ahead and day-ahead wholesale markets for electricity. Both the ISO and the PX were nonprofit corporations with governing boards that included representatives of major interest groups.

Designing the wholesale market institutions proved extremely contentious. Interest groups presented different reform models. The CPUC was itself divided, with one group preferring a "Poolco" model similar to that introduced in England in 1990 and another preferring a "bilateral contracts" model based loosely on America's natural gas markets. Ideology and rhetoric played a bigger role in the debate than serious analysis. In the end, the design represented a series of compromises that drew on bits and pieces of alternative models for market design, congestion management, transmission pricing and new-generator interconnection rules.

The two largest IOUs were ordered to sell at least half of their coal- and gas-fired generating capacity in California and strongly encouraged to sell the rest. All three IOU's did sell all of their fossil-fueled generation in California to five new unregulated companies. However, they retained their nuclear and hydropower plants, as well as their existing long-term wholesale purchase contracts from alternative suppliers.

While all retail customers were given the opportunity to choose an electricity service provider (ESP), retail prices continued to be regulated ("capped") for up to four years. The rules of the regulated retail price system played an important role in the later collapse

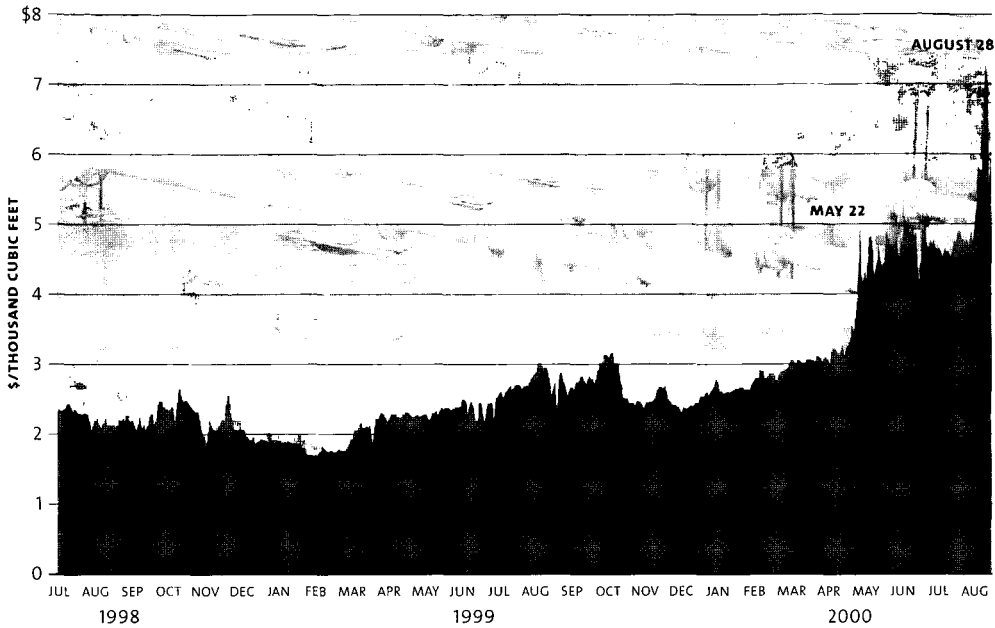
of the system. First, a fixed retail price ("retail rate freeze") was established for each utility at a level that was expected to allow the utility to recover its stranded costs in four years or less. That is, this price included a charge for generation service that was far above the anticipated wholesale market price. This was the "default service price" that retail customers would pay their local utilities if they did not choose an ESP. It was set at about 10 percent below then-prevailing regulated prices for small customers.

Second, retail customers who did choose an ESP were required to pay this fixed default service price minus the competitive spot market prices realized each hour of the day in the new wholesale markets. Thus, these customers effectively also paid their share of the utilities' stranded costs, since stranded cost is the difference between the regulated cost of generation service and the competitive market value of generation service. Utilities were supposed to recover their stranded costs by charging all customers for the difference between the generation charges reflected in the default service price and the wholesale market value of the power in the spot market.

These arrangements settled the stranded-cost problem for the utilities as long as wholesale prices remained well below the historical regulated prices. However, the approach made life difficult for ESPs, since their customers, too, were obliged to share stranded costs. By the summer of 2000, customers representing only 12 percent of demand had switched to ESPs – and most of the switching was done by large industrial customers. Thus, the utilities still had to provide for the vast bulk of the electricity needs of California's retail consumers.

What's more, the three IOUs were required to meet their service obligations by purchasing all of their customers' requirements in the

SOUTHERN CALIFORNIA NATURAL GAS PRICES, JULY 1998–AUGUST 2000



day-ahead and real-time spot wholesale markets. The utilities thus sold power from their remaining generating assets (including long-term contracts) into these markets and then bought back all of the power they needed to meet their default service demand. They were effectively “short” the difference between default service demand and what they could supply from their own generating assets. Requests to hedge their short positions beginning in 1999 were either denied or so restricted by the CPUC that little hedging took place before 2001. Accordingly, their exposure to volatile spot market prices was much larger than anyone had expected.

INITIAL WHOLESALE MARKET PERFORMANCE

Problems emerged almost immediately after the new markets opened for business in April 1998. The software to manage the wholesale markets wasn’t ready in time, and operations

began without important functions in place. Moreover, numerous compromises in market design led to poor coordination between the power exchange and the system operator, and the limitations placed on the system operator’s ability to play an active role in energy markets led to numerous problems well before the highly visible meltdown that began in May 2000. In addition, episodic price explosions and instances of anticompetitive gaming by suppliers emerged in the markets operated by the system operator during periods of very high demand during the summer of 1998, requiring regulators to step in to impose price caps and to change market rules.

In 1999, additional concerns were registered. The system operator openly worried about the slow pace of completion of new power plants, the rapid growth in demand and the resulting reduction in reserve margins. Meanwhile, spot market price volatility raised concerns about California’s reliance on

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spot markets to meet retail demand and about potential shortages and price spikes if permitting new power plants was not speeded up. However, state regulators did nothing to speed the siting review process or to otherwise facilitate completion of new generating plants. Nor did the CPUC try to reform retail market institutions and wholesale purchasing rules as the utilities completed the divestiture of their gas-fired power plants.

design. However, all changes had to be mediated through a contentious stakeholder process that was slow and led to compromises that were far from ideal.

MAY 2000–SEPTEMBER 2000: THE MARKET MELTDOWN BEGINS

In May 2000, wholesale electricity prices began to rise above historical peak levels. Prices increased significantly in June and stayed high for the rest of the summer. The

All things considered, wholesale prices before May 2000 were perhaps 15 percent higher than they would have been in a system without the design flaws.

Facing forecasts of potential shortages, the system operator did initiate a program in 1999 to bring new plants online to cover peak demand by the summer of 2000. But this program was not successful.

Despite the nascent problems, average wholesale market prices for power between April 1998 and April 2000 were reasonably close to pre-reform projections. Analysts expected that average hourly prices would start at about \$25/Mwh and rise to about \$30/Mwh as excess capacity was gradually dissipated. All things considered, wholesale prices before May 2000 were perhaps 15 percent higher than they would have been in a system without the design flaws noted above. Indeed, the retail rate freeze for SDG&E's customers ended in December 1999, and San Diegans received the benefits of lower wholesale prices during the first five months of 2000.

As of Jan. 2000, state officials acknowledged a variety of market design problems, but believed they could be fixed at a leisurely pace. The FERC was less sanguine and ordered changes in the wholesale market

wholesale prices prevailing between June and Sept. were much higher than the fixed retail price the utilities were permitted to charge for retail service. SCE and PG&E thus began to lose a lot of money: losses mount fast when you are buying power for \$120, distributing it through a high-maintenance grid and collecting just \$60 from customers.

The rate freeze of the third utility, SDG&E, ended in late 1999 when it had recovered all of its stranded generation costs and, in theory, its retail customers thereafter bore the risk from changes in wholesale market conditions. SDG&E's retail prices initially fell in early 2000, reflecting the end of stranded costs charges and the low wholesale prices. However, retail prices rose sharply along with

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SOUTHERN CALIFORNIA AND LOUISIANA

wholesale prices during the summer of 2000. Exploding retail prices in San Diego infuriated consumers and ultimately led the California Legislature to cap the generation service component of SDG&E's default service prices at \$65/Mwh with a commitment that any difference between what SDG&E paid for power and what it could charge would "eventually" be recoverable as a surcharge on retail distribution charges.

Five factors pushed wholesale prices drastically above projected levels: (1) rising natural gas prices, (2) a large increase in electricity demand, (3) reduced imports of power from other states, (4) rising prices for nitrous oxide (NOx) emissions credits and (5) monopoly problems.

Beginning in May 2000, natural gas prices began to rise and eventually soared to unprecedented levels. Natural gas prices rose throughout the country during the second half of 2000. However, for reasons that are still not well understood, spot prices for gas delivered to California in December 2000 were as much as five times higher than those in the rest of the United States.

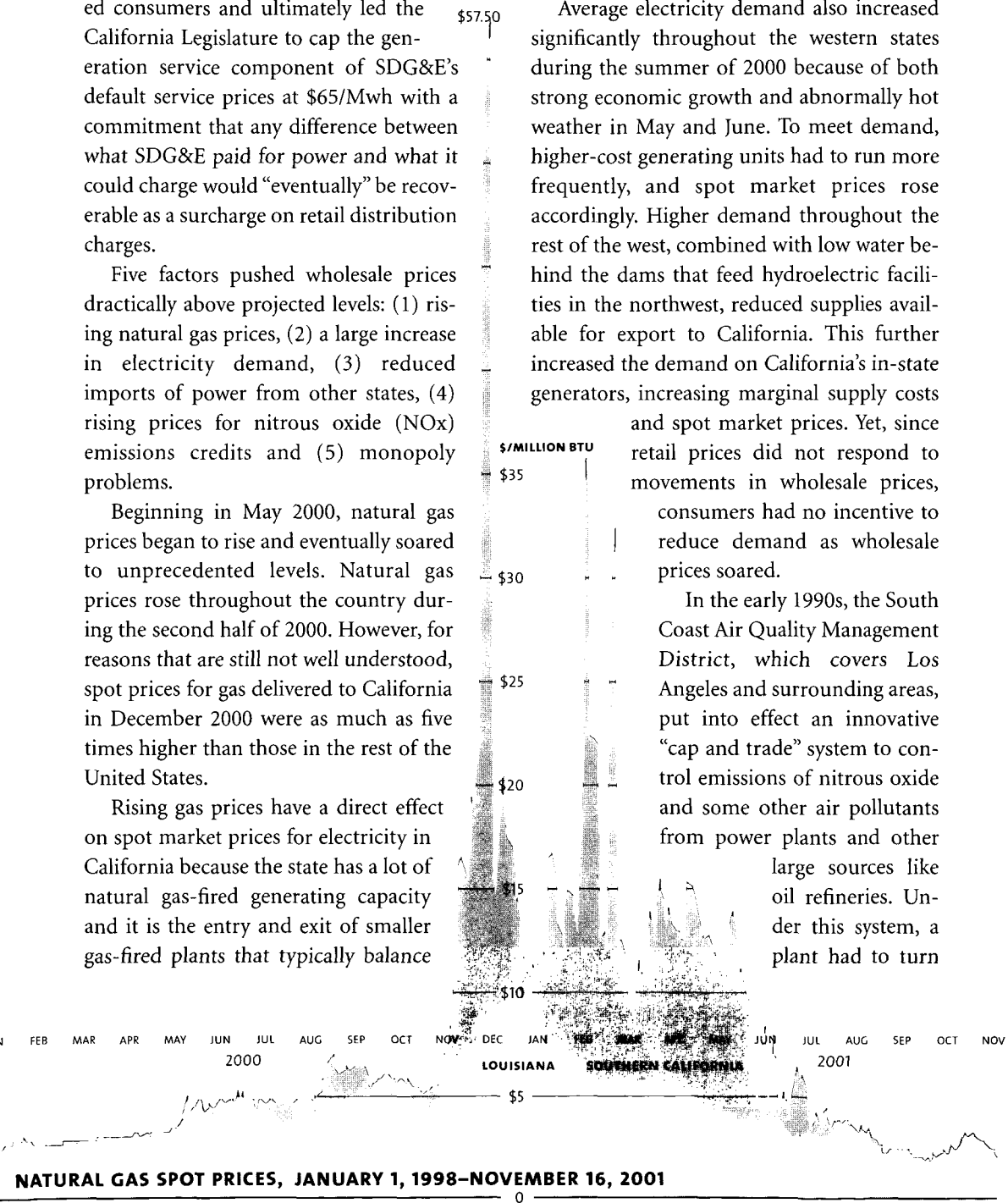
Rising gas prices have a direct effect on spot market prices for electricity in California because the state has a lot of natural gas-fired generating capacity and it is the entry and exit of smaller gas-fired plants that typically balance

supply and demand in the wholesale market during peak use.

Average electricity demand also increased significantly throughout the western states during the summer of 2000 because of both strong economic growth and abnormally hot weather in May and June. To meet demand, higher-cost generating units had to run more frequently, and spot market prices rose accordingly. Higher demand throughout the rest of the west, combined with low water behind the dams that feed hydroelectric facilities in the northwest, reduced supplies available for export to California. This further increased the demand on California's in-state generators, increasing marginal supply costs

and spot market prices. Yet, since retail prices did not respond to movements in wholesale prices, consumers had no incentive to reduce demand as wholesale prices soared.

In the early 1990s, the South Coast Air Quality Management District, which covers Los Angeles and surrounding areas, put into effect an innovative "cap and trade" system to control emissions of nitrous oxide and some other air pollutants from power plants and other large sources like oil refineries. Under this system, a plant had to turn



NATURAL GAS SPOT PRICES, JANUARY 1, 1998–NOVEMBER 16, 2001

ELECTRICITY CRISIS

in enough permits or “credits” to cover its emissions each year. Between April and Sept. 2000, the price of pollution permits to cover NOx emissions from power plants increased nearly tenfold. This further increased the costs of meeting power demand.

Thus, even if California’s wholesale market had been perfectly competitive, wholesale spot prices would have risen in the spring and summer of 2000. But there is abundant evidence that during high demand periods, California’s spot electricity markets were far from competitive. Because electricity cannot be stored and short-run demand is very inelastic, even suppliers with small market shares have the incentive and ability to withhold output from the market in order to drive up prices. Several studies have demonstrated that what economists euphemistically call “strategic behavior” by suppliers led to significant increases in wholesale prices.

By Sept. 2000, utilities were paying nearly three times as much for wholesale power as they could charge at retail, and they began to confront serious cash-flow problems. SCE and PG&E pleaded with the CPUC to lift the retail rate freeze and to allow them to charge customers for the cost of purchasing wholesale power on their behalf. The CPUC refused; no retail price increases were permitted for the balance of 2000.

OCTOBER 2000–DECEMBER 2000: THE MELTDOWN CONTINUES

Government officials expected wholesale power prices to decline during the fall, winter and spring, giving them time to figure out how to respond to cascading electricity-related problems. However, while power demand fell as usual after the summer, gas prices continued to rise, electricity imports remained low, NOx credit prices remained high and,

most important, unusually large amounts of generating capacity remained out of service. Wholesale prices did fall modestly in Oct. 2000, but then soared to new heights in November and December. By mid-December, the utilities were paying almost \$400/Mwh for power and reselling it for \$65/Mwh!

At that differential, the utilities were losing about \$50 million a day. Their requests for permission to increase retail prices were either rejected or deferred by the CPUC. Similarly, repeated requests to FERC to deal with market failures were ignored until Nov. 2000. In a report and order issued on Nov. 15 (and a subsequent order issued Dec. 15), the agency concluded that the California markets were fundamentally flawed and, pursuant to its legal responsibilities under the Federal Power Act, found that wholesale prices were “unjust and unreasonable.” It proposed a number of structural changes in California’s markets. In mid-December FERC ordered the system operator to lift the existing wholesale price caps, which the commissioners apparently believed were contributing to shortages. But FERC’s initiatives actually made things worse, and wholesale prices rose even higher.

With no retail price increases permitted by the CPUC and wholesale prices soaring to levels eight times greater than the prices that they could charge retail consumers, PG&E and SCE were quickly approaching insolvency. In mid-December, power suppliers said they would not provide further power to the market unless payments were accelerated. Accordingly, credit problems may have further reduced supplies, contributing to the continued increase of wholesale prices during Dec. 2000.

JANUARY 2001–MID-JUNE 2001: SACRAMENTO RESPONDS

By the first week in Jan. 2001, it became clear

that California regulators would not raise retail prices sufficiently to restore the utilities' credit. More power suppliers then began to refuse to sell electricity for fear of never getting paid. In mid-January, PG&E and SCE ceased making payments for power, including payments owed for supplies delivered through the power exchange in November and December 2000.

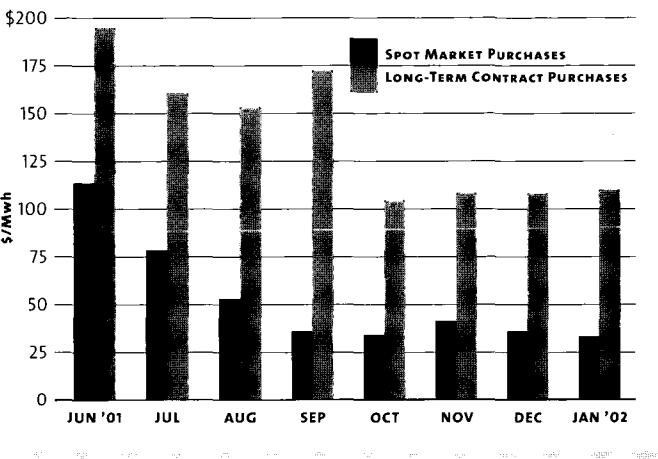
Shortages and involuntary curtailments of power to individual consumers soon followed. The PX ceased operating its day-ahead markets on Jan. 31, 2001, in response to utility credit problems. The only thing that kept the lights on in California through early 2001 were emergency orders from the U.S. Department of Energy (and subsequently from the federal courts) requiring generators to stay online.

The Bush administration, which took office on Jan. 20, 2001, indicated that it would no longer force generators to supply electricity without assurances that they would be paid. Since the utilities had no cash or credit left, the State of California, through California Department of Water Resources (CDWR), began to buy power to cover the utilities' net short positions sometime in the second half of Jan. 2001, and it continues to do so today. CDWR spent about \$8 billion through June 2001.

At the direction of Gov. Gray Davis, the CDWR also began to negotiate long-term contracts (up to 20 years) with generators and marketers. The state pursued long-term contracts in order to obtain better prices than were expected to be available in the spot market, to provide incentives to generators to sell electricity, to reduce suppliers' incentives to exercise market power in the spot market, and

to encourage the completion of new generating plants. The CDWR contracts appear to involve commitments of about \$40 billion over the next 10 years. The governor also announced a number of measures to encourage conservation and to speed siting approvals for new generating plants.

PRICES PAID FOR POWER BY CALIFORNIA DEPARTMENT OF WATER RESOURCES, JUNE 2001–JANUARY 2002



On March 27, 2001, the CPUC announced that retail prices would be increased by about 40 percent, with rates structured to reward reductions and penalize increases in consumption. Retail consumers began to see these rises in their bills in June 2001. The increase was intended to begin to compensate the CDWR for the costs it had incurred to purchase power. It was not sufficient, however, to restore the utilities' credit, and PG&E soon sought protection in federal bankruptcy court.

One-third of the generating capacity in the ISO's areas remained out of service for most of the winter and spring of 2001, and imports remained low. As a result, supply emergencies were in effect for most of this period, despite the fact the peak winter demand was not unusually high and was far less than power

ELECTRICITY CRISIS

typically supplied by in-state generators. Predictions made during early spring 2001 for the coming summer were bleak as well. Demand was projected to continue to grow, yet little new generating capacity was expected to come online. The system operator predicted there would be hundreds of hours of blackouts during the summer. During this period, forward prices for electricity for the summer months were as high as \$700/Mwh.

In response to the growing crisis, California officials intensified conservation efforts, increased efforts to speed the completion of new plants and continued to enter into long-term contracts with electricity suppliers. The Southern California Air Quality District helped out by dropping power plants from the cap and trade program, and by replacing the NOx credit trading system with a modest penalty of \$7.50 per pound for exceeding emissions limits.

With blackouts looming and forward prices for electricity in the stratosphere, California and other Western states also pressed Washington to restore caps on wholesale prices and to force generators to make all the electricity they could produce available to the market. FERC responded, albeit slowly, to the political pressure.

On April 26, it required generators to bid all available supplies that had not already been scheduled into the auction market. It also adopted bid caps for supplies when system operating reserves fell below 7 percent (Stage 1 emergency condition). On June 18, FERC modified this price mitigation plan by applying it to all hours and to all spot sales of electricity in the west. Finally, FERC instituted a proceeding to resolve claims that California had been overcharged for power in 2000 and 2001 and held out the possibility of substantial refunds.

JUNE 2001–DECEMBER 2001: WHOLESALE PRICES FALL AS RETAIL PRICES RISE

During the first week in June 2001, spot and forward wholesale prices finally began to fall. The decline continued for the rest of the summer, and by August prices returned to levels that had not been seen since mid-May 2000 and remained low for the rest of the year. Forward prices for 2002 also dropped drastically. Indeed, both spot market and forward prices have now fallen well below the prices in the long-term contracts negotiated by the state. Forward prices for 2002 average about \$35/Mwh, far lower than the expected prices under the CDWR's contracts.

Why the fall? Many of the same factors that caused prices to explode during the summer of 2000 appear to have been operating in reverse during the summer of 2001.

First, weather-adjusted electricity demand started to slip in January and stayed well below 2000 levels for the rest of 2001. Since retail electricity prices did not rise significantly until June 2001, we must attribute the decline in demand, in part, to all the jawboning about conservation as well as to the formal energy conservation programs imposed by the state. However, the large price increases put into effect in June, which were structured to provide incentives for consumers to reduce demand, also induced conservation during the summer. Then, too, the recession played a role.

Second, natural gas prices declined across the country, and after early June 2001 differences in the price of gas between Southern California and the rest of the country declined drastically.

Third, easing emissions restrictions in Southern California made a difference.

Fourth, power suppliers seem to have lost the ability or the will to use strategic behavior

to influence prices. It is fairly clear that FERC's price mitigation program, along with the intense scrutiny of suppliers by regulators, courts and the media, provided powerful incentives for suppliers to be on their best behavior during the summer of 2001. Large amounts of generating capacity returned to service: average daily outages fell from 10,000 megawatts in April to 4,000 in June and 3,500 in August. In early July, three new power plants began operating in California – the first new generating capacity in nearly a decade. Additional generating capacity came online later in the summer, for a total increase of about 1,800 megawatts.

IS THE CRISIS OVER?

The expected supply shortages never emerged during the summer of 2001 and wholesale prices have fallen to near their pre-reform expected levels. New generating plants are slowly being completed and shortages are not expected for the coming year. However, the good news came at a very high cost. The state is now saddled with tens of billions of dollars in long-term contracts that are likely to carry prices well above their competitive market value. The costs of these contracts will be paid either through future electricity prices or state taxes or both. Retail prices are now much higher than they were in 1996, when restructuring began, and are likely to remain high for years. The economic consequences for consumers are just beginning to be felt.

Moreover, the future of California's electricity sector remains murky. The organized wholesale power markets have largely disinte-

grated. The California Power Exchange stopped operating at the end of Jan. 2001 and subsequently went bankrupt, eliminating a large, transparent day-ahead market for electricity. The two largest utilities remain insolvent. While the California Independent System Operator continues to operate real-time



markets for energy, this market has also become dysfunctional as utility credit problems have led the ISO to rely increasingly on the state for supplies. The California Public Utilities Commission has now suspended the retail competition program that was the primary motivation for the restructuring initiated in the mid-1990s. A state power authority has been created with vague responsibilities to provide for new generating capacity, to subsidize renewable energy projects and to encourage conservation.

The State of California has effectively taken over many key components of the electric power industry in the state, replacing the nascent competitive power markets with state power procurement and regulated retail prices in large part determined by the state's need to recoup the cost of power purchased during the crisis. There is little doubt that

ELECTRICITY CRISIS

California's electricity sector is in a much worse position than it was in when the discussion of restructuring began in 1994.

LESSONS LEARNED, AND FORGOTTEN AT OUR PERIL

Start with the reality that electricity has unusual physical attributes that challenge our abilities to design a well-functioning competitive market. Thus, effective market design simply isn't possible if the objective input of experts from many disciplines, including power system engineering, economics, information technology, finance and accounting, is compromised. Design flaws weren't the primary cause of the collapse of California's competition program. However, the tone set by the interest group maneuvering in the market design process infected all aspects of California's competition program.

Electricity markets can't work well if consumers are completely insulated from changes in wholesale prices. California deregulated wholesale prices, but failed to deregulate retail prices or to allow the utilities to use forward contracts to hedge their regulated retail service obligations. Not only did this drive the utilities into insolvency, but left consumers without incentives to reduce consumption.

Spot electricity markets are inherently volatile. Spot market prices can rise to extraordinary levels and are especially susceptible to manipulation when supplies are tight. Creating a retail market framework ensuring that a large fraction of consumer demand is covered by longer term fixed-price contracts will help to avoid problems that emerged in California and better match most consumers' taste for bearing risk.

Real-time retail pricing allows commercial consumers to express their individual preferences for reliability. It also introduces demand

elasticity into the spot wholesale market, which in turn dampens price volatility and helps to neutralize suppliers' market power. While many consumers will prefer to hedge volatile spot market prices with forward contracts, large price-sensitive consumers will find it advantageous to adjust their consumption to swings in hourly prices. California both refused to allow utilities to enter into forward contracts and ignored proposals for programs that would allow industrial customers to respond to wholesale price spikes by reducing consumption.

From the broad societal perspective, the benefits of electricity sector reform should come from investments in efficient power plants and innovative demand management. Speeding the ability of developers to build environmentally sound generating plants and providing good incentives to expand transmission networks are essential for good long-run market performance. California focused too much on illusive short-run gains from low-priced power available when there was excess capacity and focused too little on creating institutions to support investment in generation and transmission facilities.

Mid-course corrections have almost always been needed to mitigate problems in restructured electricity markets. If the California and federal regulators had acted in September 2000, when the current problems had become crystal-clear, the crisis would have been of far less consequence. For example, the terms and conditions of forward contracts would have been much more favorable than those negotiated by CDWR if the state had encouraged the utilities to enter into longer term contracts during the summer of 2000 when they requested this authority. Both the CPUC and FERC acted slowly and ineffectively as the crisis deepened and spent more energy pointing fingers than finding solutions. 

Siemens



Betting
that **Big**
is once again
Beautiful

by Marsha Vande Berg

SIEMENS

Those concerned about the growing pains of globalization wonder how the world economy will adjust to the looming presence of multinational conglomerates. But the opposite question is equally relevant: how will the multinationals adjust to a global economy as rapid changes in technology, political climate and regional business cultures force them to run just to stay in place? Few companies face as many of those challenges as Bavaria, Germany-based Siemens.

The massive electronics and engineering conglomerate is leading German companies' rush to embrace American-style shareholder values, with their pressures to maximize stock price. In addition, coping with the stresses of size requires the sort of managerial discipline that is generally in short supply in old-line European businesses. The Siemens version is a self-styled program of "creative destruction" under the leadership of president and CEO, Heinrich von Pierer. In 1998, von Pierer's "ten-point excellence program" started as nothing less than a cultural revolution for a firm that came of age in the era of Germany's "iron chancellor," Prince Otto Eduard Leopold von Bismarck.

A GLOBAL FIRM FROM ANOTHER ERA

The firm was founded in 1847 in Berlin as Siemens & Halske Telegraph Construction Company. The early discoveries of Werner von Siemens (1816-92) led to the building of Europe's first electrical long-distance telegraph line, from Berlin to Frankfurt am Main. Soon thereafter Siemens & Halske was en-

gaged to build telegraph systems worldwide, including the Indo-European line between London and Calcutta. The first transaction with China included supplying the Chinese with the first "pointer telegraph" in 1872. Two years later, it helped lay a transatlantic cable between Ireland and the United States.

Siemens' entry into the maelstrom of multinationals that scour the globe for economies of scale and superior returns was delayed by World War II. Siemens lost four-fifths of its resources due to the war, and in 1998, it joined other German industrial giants in an agreement to pay compensation to victims of the Nazi war machine.

Arguably, Siemens' most prescient initiative in its efforts to rebuild as a global corporation after World War II was its 1982 decision to open an office in Beijing. In doing so, it demonstrated an early commitment to Deng Xiaoping's economic reforms, which would later pay off handsomely for the company – not to mention for China.

A GLOBAL FIRM IN THE GLOBAL ERA

These days Siemens is being shaped by its need to survive in the bewilderingly risky global-business environment. As the information technology revolution continues to shrink the world, as cross-border commerce and investment double and re-double, Siemens works at distinguishing itself as big, tightly managed and careful to take the long view on economic cycles.

To this end, Siemens' business plan uses a three-pronged approach: brand the company as a one-stop solution for the world's engineering and technology needs; make large investments in regionally based research and development; knit together production ranging from light bulbs to cell phones to power plants with Sharenet, the company's multi-million dollar e-business networking system.

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While Siemens' corporate headquarters is near Munich, nearly 80 percent of the firm's business is international. Worldwide the company has 470,000 employees, including 75,000 in the United States and 25,000 in China. The company also has multiple visions of itself. In Germany, Siemens is a relatively conservative blue chip; in America, an aggressive alternative to General Electric; in China, a part of the national economic miracle.

Siemens' conceptual scorecard is tallied by market share and earnings at each of its 14 divisions. Divisions are focused on widely diverse business segments – transportation, lighting, power, automation and control, medical, and information and communications – each of which is considered a major company not bound by geography. Both the United States and China operations are under holding companies that oversee their respective regional activities. Over the past five years Siemens has laid claim to \$8 billion in U.S. acquisitions, including that icon of American industrialization, Westinghouse. As a result, the United States has replaced Germany as Siemens' top market.

The company is increasingly influential in Asia – China is Siemens' number three market – and as such, is helping to pull the center of Asian economic activity in China's direction. Siemens Ltd. China supports more than 50 offices, and has used its hefty local R&D budget to build relationships with the country's key research institutes. "Siemens did not come here to go away," Siemens China president, Ernst Behrens, told the *South China Morning Post* last July. "We want to be seen as a Chinese company."

Technology, communications and infrastructure projects dominate the firm's China portfolio. One of Siemens' more highly publicized Chinese projects is a venture with ThyssenKrupp to build a magnetic levitating train. The contract was inked last November when German Chancellor Schroeder had lengthy



conversations with leaders in China, including Prime Minister Zhu Rongji.

The Germans will build the cars and stations while the Chinese will build the track. Scheduled for completion in 2003, the project includes trains that float on a magnetic field above the rails and cover the 20.5-mile route from Shanghai to the city's new airport in eight minutes. Successful completion of the maglev project also is expected to yield additional contracts for Siemens – notably, a big piece of an estimated \$20 billion in rail projects linking Shanghai with the cities of Hangzhou and Beijing.

ADVENTURES IN TELECOM

Another Siemens' focus in China is telecommunications, where an all-things-to-all-

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people strategy also offers insights into how multinationals conduct business in today's globalizing world. Siemens started by supplying handheld mobile phones. Today, the company is expanding into a variety of related telecommunications infrastructure projects being built around competing digital stan-



dards. Indeed, Siemens' presence covers all the bases – so-called 2G (second generation) systems, 2.5G and 3G.

Involvement in the dominant 2G technologies appears to be a critical element in Siemens' intention to take market share from cell phone market leaders Nokia, Motorola and Ericsson. To that end, Siemens seized an opportunity to be named the provider of mobile phones to participants at the annual Asia Pacific Economic Cooperation conference last October in Shanghai and attended by world leaders including George W. Bush, Vladimir Putin and Jiang Zemin.

Still, the approach did not insulate the company from last year's global downturn. Like the other big players, Siemens suffered

from an oversupply of telecommunications capacity. It faced a sharp drop in profits in both fixed-line and mobile communications units. The downturn threatened the viability of roughly one-third of Siemens' enterprises. Management lopped off 17,000 jobs, mostly in Germany, and the company looked to other sectors to make up for the slow growth in telecom. In the process, Siemens' management also convinced powerful German employee councils to accept the change. In an economic swing, it is nearly impossible to achieve balance within a single region, explains Gerhard Schulmeyer, who retired Jan. 1 from his job as president and CEO of U.S. Siemens Corp.

Meanwhile, some company officials also took note of the difficulties that face any company choosing to go it alone amidst sweeping changes in a marketplace. Siemens' board member Volker Jung was quoted as saying that only undisputed telecom leader Nokia is capable of going solo and remaining a profitable purveyor of telecom equipment in last fall's tough times. At the time, the buzz was that Siemens intended to consolidate a portion of its business with that of equally hard-pressed Motorola.

So far, nothing has come of the speculation, dismissed as "rumors" by Siemens. Both companies also announced massive additional R&D investment in China – and both initiated job cuts in their respective domestic markets. Siemens also boosted its China portfolio by inking an agreement to roll out an extension of Tibet's mobile phone system based on GSM (Global System for Mobile communication) technology. According to media reports, the work in Tibet is in addi-

tion to Siemens' other multimillion-dollar deals to build out GSM mobile networks for China Mobile and China Unicom.

In the United States, Siemens is set to piggyback on a decision by Cingular, America's second-largest network, to overlay GSM technology throughout its network. Siemens is supposed to supply GSM handsets and infrastructure. Both companies are trying to position themselves to take advantage of growing interest in dual-use technology in the U.S. market.

It is in China that Siemens earns one-third of its mobile infrastructure revenues.

From Siemens' perspective, the work also can open the door to a prospective 3G market in the United States. These so-called third-generation mobile phones are touted as providing anytime, anywhere Internet access provided they have the necessary bandwidth to download files. Once again, Siemens appears to be utilizing its size to cover the bases in a sector. Noted here is Siemens' investments in technologies that compete with the GSM standard – notably, Qualcomm's CDMA technology.

Back in Asia, Siemens' interest in CDMA gives the company a better opportunity to capture market share where the battle over 3G technology standards is ahead of that in the United States. Siemens is also making sure it does what it can to stay on top of the China telecom heap. It is in China that Siemens earns one-third of its mobile infrastructure revenues. Also, China has passed the United States in terms of numbers of cell-phone circuits (with 120 million-plus users) and remains the world's fastest growing market.

Siemens' investment in China telecom

R&D is also considerable. Its partnership with state-owned Datang Telecommunications Group and Huawei Technologies – along with the Chinese Academy of Telecommunications Technology – is a case in point. With \$1 billion in Siemens' investments, the partnership is planning to roll out 3G systems based on the hybrid TDS-CDMA technology.

The company is betting that TDS-CDMA has a shot at dominating China's 3G market. TDS-CDMA is a 3G system developed by the Chinese and celebrated as a patriotic achieve-

ment in the Chinese media. In 1999, it was accepted as one of three global standards recognized by the International Telecommunications Union as being capable of handling high-speed data transmission for mobile phones.

Siemens' officials are unabashed about their hopes for investments in a range of competing telecom technologies as well as in widely diverse marketplace sectors. Indeed, Schulmeyer argues that the company's diversity is what allows it to survive in the rapid boom-and-bust nature of new economy industries such as telecom. Then if new economy sector activities do poorly, Siemens can count on old-economy sectors with longer cycles, such as power plants and medical systems, to pick up some slack.

This approach, tailored for a dauntingly unpredictable globalized marketplace, shuns the current conventional wisdom that favors a tight focus on core competencies. Big can be beautiful as long as big translates into relatively steady growth in earnings and market share. 

Crying



for Argentina

by Thomas D. Willett

The collapse of Argentina's currency is a tragedy, and not just for international investors who stand to lose a bundle. Argentines have paid dearly. Their economy has been in severe recession for four years, with unemployment near 20 percent. And because of their government's mishandling of the crisis, the economic situation will worsen before it gets better.

The occasional currency bubble may or may not be an inherent downside to market capitalism. What is clear, however, is that much can be done to make such crises less frequent and less costly. Hence, the need to take measure of the recent rash of international financial crises, of which Argentina's is the latest.

To many on the political left, Argentina's devaluation and default were just further proof of the bankruptcy of the neo-liberal economic ideology at the heart of the "Washington consensus" – the principles that guide the U.S. Treasury, the International Monetary Fund and the World Bank. The financial contagion many policy-makers feared would follow an Argentinean default has failed to materialize. But there is still a danger of political contagion: From the perspective of the left, Argentina's trauma demonstrates the need for governments to turn their backs on the market and return to statist strategies.

So far, enthusiasm for the old ways has remained more the mantra of leftist intellectuals than an influence on policy. True, the efforts of the IMF to raise the principle of free international capital flows to the same exalted level as free trade has suffered a severe setback. However, with the notable exception of Malaysia, the crisis countries of the late 1990s have resisted the impulse to regulate capital or protect domestic industry.

Political analysts suggest, however, that the Argentine crisis presents a much more serious threat of policy reversals across Latin America. Liberal economic policies spread with little resistance through Latin America during the 1990s, but few of the leaders who initiated the change in direction are still in power. Thus, the thinking goes, a reversion to statism could occur just as rapidly.

Argentina's quick succession of governments since the crisis began illustrates the tension. The voices of populists, who blame the crisis on foreign

corporations and banks, have been heard along with those of more sober analysts calling for the government to bring its fiscal house into order. Protectionist rhetoric and dark mutterings about the virtues of confiscating the equity of the banking system compete for attention with the hard reality of currency depreciation.

The IMF and the U.S. Treasury have wisely been biding their time, refusing to support new financial assistance for Argentina until a credible economic-policy strategy is put in place. In the meantime, the Argentine economy has virtually ground to a halt. The banks, whose debts far exceed their assets, are not lending; rather than force them to close their doors, the government has sharply limited withdrawals. Many corporations are slowing production because they cannot obtain critical materials; you just can't sell good wine if you don't have corks to seal the bottles.

How did Argentina's seeming economic miracle of the early 1990s end in catastrophe? Argentina is experiencing two distinct, but reinforcing, crises. One was triggered by the insolvency of the government, which led it to default on loans. The other was currency overvaluation, which forced devaluation.

Argentina's fiscal distress was due in large part to the government's failure to collect taxes. Cheating has cost the government roughly 40 percent of its expected revenues. That, however, never stopped politicians from buying power with populist spending programs and slush fund outlays to political allies. Excessive spending in the provinces, where politicians refused to accept orders from Buenos Aires, mirrored profligacy at the top. The free-spending ways of the Fernando de la Rúa administration in the late 1990s



AP/WIDE WORLD PHOTOS (ALL)

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proved the last straw.

The long recession which was made worse by the overvaluation of the Argentine peso (and the resulting inability of producers to compete at home or abroad), made the budget situation even worse. The economic downturn reduced tax revenues, while the poor prospects for recovery raised worries about how the government debt would be repaid. These concerns reduced capital inflows and forced greater monetary contraction, worsening the recession.

The deepening recession, in turn, raised doubts about the ability of the government to stick by its decade-old commitment to lock the value of the peso to the U.S. dollar. Fear of devaluation raised interest rates on loans denominated in pesos, while fear of default also raised interest rates on the government's considerable dollar-denominated debt. Higher interest rates increased the budget deficit and further worsened the outlook for avoiding default. Thus a vicious circle of worsening expectations spun out of control.

Two major planks of the Washington consensus preached by the IMF are fiscal responsibility and the avoidance of overvalued exchange rates. It was not the failure of these doctrines, but the failure to follow them, that led to Argentina's crisis. Not surprisingly, the Argentine government tried to shift the blame by charging that the crisis was the fault of assorted foreigners. As the crisis mounted, the government's line was that the only real problem was pessimism on the part of investors and depositors. If confidence could just be restored, went the party line, the hem-

orrhage of funds from the banks would stop and a virtuous circle could be initiated.

Market panics triggered by misinformation do occur on occasion. But this was not one of those occasions; the problems scaring depositors and investors were all too real. Under IMF pressure, the government did make a stab at budget cutting, but the legislature and the provinces dug in their heels to such an extent that most of the psychological benefits of the government budget actions were nullified. Tactical mistakes – among them, the call by Domingo Cavallo, Argentina's economics minister, for linking the exchange value of the peso to an average of the dollar and the euro – further undermined confidence. This was read by many as a crack in the government's commitment to avoid devaluation. Indeed, it was hard to avoid the impression that the government was just playing for time because it did not know what to do.

Argentina's problems may not be evidence that the free-market model is bankrupt. But Argentina's tragedy does suggest the bankruptcy of a particular type of economic ideology that has been promulgated by a small group of economists – and the editorial page of *The Wall Street Journal*.

Proponents of what I call fixed-rate fundamentalism argue that sound money is the key to economic success, and that a fixed exchange rate is the key to sound money. A few decades ago, such arguments were advanced primarily by those advocating a return to the gold standard. In recent years, the mechanisms of choice have become "currency boards," or the replacement of the national currency with a strong foreign currency like the U.S. dollar.

A currency board is a kissing cousin to a precious-metal standard. Under a currency board regime, a country fixes the value of its currency to another and allows its own

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money supply to expand or contract only as its central bank's holdings of the foreign currency rise or fall. This is basically the same mechanism as the gold standard of the 19th century, with a foreign currency replacing the role of the metal. For Estonia, the choice was the German mark (and now the euro). For Argentina, the choice was the dollar.

The adoption of a currency board, or dollarization, as the outright adoption of the U.S. dollar as one's own is called, is sometimes a wise policy. But the operative word is "sometimes." A currency board has worked well in Estonia. But the fixed-rate fundamentalists recommend currency boards as a solution to just about everything.

THE TYPICAL CAUSE OF CURRENCY CRISES: FALSELY FIXED EXCHANGE RATES

Before turning to Argentina, we should note that the proximate cause of the Argentine crises differed in one fundamental respect from that of most major currency crises of the 1990s – those of the European Monetary System in 1992 and 1993, Mexico in 1994, Asia in 1997, Russia in 1998 and Brazil in 1999. The latter resulted from the failure of governments to respect what has become widely known as the unholy-trinity theorem of international monetary relations. The theorem says that the laws of nature and arithmetic will not allow countries simultaneously to pursue fixed exchange rates, independent monetary policies, and free international capital flows.

The reason governments so often ignore this theorem is that it only applies to the medium- or long-term. In the short run, countries can use foreign currency reserves to

finance international payments imbalances. If these imbalances are temporary, countries can thereby avoid changes in either their exchange rates or their monetary policies. And since governments typically see either as



being costly, they tend to adopt overly optimistic judgments of what is temporary. As a result, they tend to wait too long to acknowledge the seriousness of international payments problems.

Unencumbered by such political considerations, international-market participants – everyone from speculators to risk-averse corporations – generally recognize that a currency

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is seriously out of line long before governments take action. Thus, while the timing is uncertain, the direction of major changes in pegged exchange rates is usually clear. This paradise for speculators is known as the one-way gamble. It is what allowed George Soros to take home almost a billion dollars in the

ence has led to what is called the unstable-middle, or two-corners, hypothesis. In this view, bad exchange-rate policy was not always the only cause for the rash of international currency crises during the 1990s, but was an important contributor in all of them. Thus, one need not invoke speculators or inherent market instability, just the simple failure of

This paradise for speculators is known as the one-way gamble. It allowed George Soros to take home almost a billion dollars from the British Treasury.

early 1990s from the British Treasury. And it is widely regarded as a major reason for the breakdown in the early 1970s of the system of pegged (but adjustable) exchange rates established after World War II.

The designers of this Bretton Woods system did not worry about speculation because they assumed controls on capital flows imposed during the war would remain in place. As capital market liberalization proceeded, however, currency crises became frequent. Thus, in today's world of substantial capital mobility, most economists believe that what can be called "falsely fixed" exchange rate regimes virtually guarantee periodic currency crises.

"Crawling pegs," which allow small, frequent changes in exchange rates, offer a way to diffuse pressures on currencies – especially when the rules allow a substantial margin for fluctuation above and below parities known as "crawling bands." These are not always sufficient to avoid crisis, however. Brazil, Indonesia, Korea, Mexico and Russia all had versions of crawling bands or pegs before the East Asian currency crisis.

This combination of theory and experi-

governments to remember the lessons from the breakdown of the Bretton Woods system.

The policy recommendation that follows is straightforward. Countries should avoid the unstable middle of falsely fixed exchange rates and move toward genuinely fixed or fully flexible exchange rates. Economists differ at present over whether it is necessary to move all the way to one extreme or the other. But the Argentine case certainly suggests that avoiding the unstable middle is not a sufficient condition for avoiding currency crises.

Some fixed-rate enthusiasts argue that Argentina just did not go far enough; if the government had made the dollar the official currency, they say, the crisis would have been avoided. Yet while the relative merits of currency boards and dollarization are worth debating, the idea that dollarization would have saved Argentina is far-fetched.

THE FALSE PROMISE OF EXCHANGE-RATE-BASED STABILIZATION

Why did so many governments fail to heed the lessons of the breakdown of the Bretton Woods system? Economists are partly to blame. Several influential theoretical papers,

along with the apparent success of some Western European nations and several developing countries in using pegged exchange rates to control inflation during the 1980s, gave rise to the view that pegging the exchange rate was the best option for stabilizing prices. The buzzwords were exchange-rate-based stabilization (ERBS) – the need to use the exchange rate as an anchor for the domestic economy. These views not only had a major impact on academics, but were also actively promoted by governments of the European Monetary System and found favor with some top officials at the IMF. In turn, many emerging-market economies fell prey to its attraction.

ERBS is not an inherently dumb strategy. The initial effects tend to be an economic boom accompanied by a rapid deceleration of inflation. It does not take a rocket scientist to favor good times and rapidly falling inflation over a recession and continuing inflation. No wonder ERBS strategies were so popular.

There was a dirty little secret, however, discovered by researchers but not emphasized in most their policy advice. While inflation tended to fall rapidly after fixed rates were imposed, it rarely fell rapidly enough to prevent the currency from becoming overvalued. As exports lost competitiveness, the booms turned to busts and currency crises followed.

Crawling pegs, as opposed to fixed ones, offered a bit of wiggle room, but politics typically kept governments from allowing currencies to depreciate rapidly enough. This

problem was reinforced by international investors, who frequently failed to take a long view. Thus, with the initial success of stabilization policies, capital tended to rush in. And these surges typically masked the deterioration in the country's competitive position.

Of course, this usually was not the whole



story. Often there were other contributing factors beyond a country's control, such as the appreciation of the dollar (which overpriced dollar-linked currencies) and depreciation of competitors' currencies, which added to the problems facing Argentina and Thailand. In Russia, the decline of oil prices hit hard. And in Mexico, the tightening of U.S. monetary policy, which raised capital costs, and a political assassination in the runup to elections made a difference. But the basic pattern of ERBS is too clear to miss: extraordinary success early, failure later.

Some countries have managed to beat the odds by adopting sufficient exchange rate flexibility (Poland) or by making a genuine

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fixed exchange rate work over the long run (Estonia). But the examples of Mexico, Brazil and Argentina are more representative. Argentina's commitment to a fixed exchange rate via its currency board delayed the currency crisis for much longer than is typical with ERBS. But this turned out to be more of a cost than a benefit. It would have been much better if the crisis had come years earlier, saving Argentina years of recession.

I have little doubt that top officials, like Domingo Cavallo, the original architect of the currency board, genuinely believed that devaluation and default could be avoided. But few economists outside of the Argentine government shared this view.

FIXED EXCHANGE RATES: NOT FOR EVERYONE

To understand why most economists did not share Cavallo's optimism, look briefly at what is called the theory of optimal currency areas. The central insight is that there is not one best exchange rate system for all countries. There are costs as well as benefits to all exchange regimes, and the ratio of these will vary across countries according to a variety of factors. Fixed-rate fundamentalists tend to focus only on the costs of flexible exchange rates and the benefits of fixed rates. (Of course, some flexible-rate enthusiasts do just the opposite.)

The early contributions to that theory focused on two major considerations: the size and openness of the economy, and the flexibility of its internal adjustment mechanisms. Under fixed exchange rates, domestic production is forced to respond to international markets, while under flexible rates the international sector does most of the adjustment. Which sector should adjust to the other?

Clearly, this depends in part on their relative size. For a tiny economy like Estonia,

where the international sector is large relative to domestic economic activity, a fixed rate makes the most sense. But with a large economy like the United States, it is just the opposite. While our international trade and investment is large in absolute terms, it is small compared to the domestic economy. Thus, fixing exchange rates in the United States would amount to letting the tail wag the dog.

Under fixed exchange rates, the international sector dominates the domestic sector through the effects of the balance of payments on the national money supply. Under any system of truly fixed exchange rates, like the gold standard or currency boards or dollarization, balance-of-payments surpluses directly lead to increases in the national money supply, while payments deficits cause decreases. With highly flexible wages and prices and high labor mobility, these changes in the money supply cause the price level to increase or decrease in tandem. That, in turn, corrects the payments imbalance.

This is an old tale told often, one that originates with David Hume in the 18th century. But the model breaks down when domestic labor markets are not flexible. Then the monetary contraction caused by a balance-of-payments deficit causes recession rather than falling wages. That is what happened to Argentina.

Argentina's decision to adopt a currency board in the early 1990s was defensible. The economic situation was desperate: repeated efforts to bring hyperinflation under control had failed and the government had little credibility. Thus, there was a strong case for taking the printing presses out of the hands of policymakers.

There are many ways to do this. But faith in government was so low that less decisive measures, like the creation of an independent central bank or the adoption of a firm set of

marching orders for the central bank (à la Milton Friedman) would just not be taken seriously. Thus, the currency board seemed the only credible way to produce sound money. In any event, the rapid depreciation of the Argentine currency had already led to widespread use of the dollar by Argentines. Thus, the creation of a dollar-based currency board seemed the obvious fix.

In its early years, the experiment proved a great success. Inflation was conquered and growth soared. Add a lot of talk and some

compared to GDP. But most of this debt is payable in U. S. dollars, not Argentine pesos. And as a portion of Argentina's foreign exchange earnings, the debt had indeed become dangerously high even as the overvalued peso was making it more difficult to export and thereby to earn foreign-exchange.

In the apologists' scenario, the growing levels of debt were the fault of the Argentine government, but the overvaluation of the peso was not. The currency board had been quite successful in stopping inflation in its

As exports lost competitiveness, the booms turned to busts and currency crises followed.

action on privatizing industry and deregulating markets to the brew, and it is clear why Argentina became a darling of international investors. By the time worries about the soundness of their investments set in, the bonds of the national and provincial governments of Argentina accounted for almost one fourth of the international holdings of government debt from all emerging market countries.

As discussed above, initial success with exchange-rate-based stabilization is not unusual. This success can easily generate a false sense of security, however. While Argentina did score well on the optimal-currency-areas theorem's criteria of large private holdings of foreign currency, other important criteria suggested problems. Argentina was – and is – one of the most closed economies for its size on the planet. Its exports still do not exceed 10 percent of its GDP.

Some have argued that the market's concerns about excessive government debt were greatly exaggerated because the ratio of Argentina's total debt was not particularly high

tracks, and inflation rates in Argentina were frequently even lower than those in the United States. The problem was that the dollar had appreciated against most currencies and the peso was fixed to the dollar; thus the peso appreciated against the currencies of most of its trading partners.

Another optimal-currency-area criteria is that you trade a lot with the country whose currency you have, in effect, adopted. By this criterion, fixing to the dollar would make great sense for Canada and Mexico, since more than 70 percent of both Canada and Mexico's trade is with the United States. But not only is Argentina's overall level of international trade quite low, only 11 percent of its exports in 1999 found their way to the United States. Thus, the peso's appreciation against most of its trading partners' currencies in the late 1990s was initially driven by the rise of the dollar, even though Argentina's trade with the United States amounted to less than 1 percent of its economy. Argentina's competitive position was further undermined by the large depreciation of the Brazilian real after

ARGENTINA

its crisis in 1999. And Brazil is one of Argentina's major trading partners.

With any form of fixed exchange rate, if your currency becomes overvalued, adjustment must come through changes in wages and domestic prices. In Argentina, these adjustments did not go smoothly. The Argentines, with their history of strong, highly political unions, have never been known for flexible labor markets. Thus they scored low on another important optimal-currency-area theorem criterion.

Don't worry, argued the fixed-rate fundamentalists. What is important is not meeting the criteria before the fact but meeting them after. No matter that labor markets are chock full of rigidities now. Adopting a fixed rate will propel reform. One hears the same optimistic scenarios posited for the European Monetary Union.

While there is some truth to the argument, it misses a crucial point. The pursuit of economic efficiency is rarely a government's highest priority. Indeed, if efficiency were really at the top of the list, the economic rigidities would have been dealt with long before currency rates made reform so critical.

Any reform of markets inevitably generates losers as well as winners, and, often as not, the potential losers have a lot of political influence. Thus, while the adoption of fixed exchange rates does tilt the balance of forces in the direction of reformers by removing an alternative means of adjustment, the magnitude of the shift may be slight. This is what happened in Argentina. Wages and prices did become more flexible and both have been falling in recent years – but not by nearly enough to avoid a serious recession.

This problem is even more serious with respect to fiscal policy. With wage discipline, fixed rates at least shift the dynamic in the

right direction. With fiscal discipline, the effects are often quite perverse. The combination of fixed exchange rates and high capital mobility make fiscal deficits easier to finance during their early stages. Thus, they tend to retard rather than to increase pressures for fiscal reform. That explains why fiscal reform lagged during Italy's early days as a member of the European Monetary System, and it explains why fiscal reform lagged in Argentina. Even during its years of wine and roses in the early 1990s, Argentina continued to run budget deficits. These deficits began to grow rapidly as the economy slowed, of course. Provincial government spending faced little pressure for restraint, and the tax collection system remained one of the most inefficient in Latin America. Thus, the primary reason for default was the issuance of excess debt relative to Argentina's ability to pay. In late 2000 the financial markets began to give strong warnings of impending problems, and the interest-rate premium on Argentina's debt began to soar. But the signals came too late to avert a hard landing.

HINDSIGHT

The most important lesson of the Argentine crisis is that fixed-rate fundamentalism, not open markets or the Washington consensus, failed Argentina. Sound money is valuable, and fixed-exchange-rate regimes like Argentina's currency board can provide it. Sound money, however, can neither ensure the adoption of, nor substitute for, responsible fiscal policy. Nor can it guarantee sufficient wage and price flexibility to make it possible to adjust to an overvalued currency without beggaring the working classes.

Many fixed-rate fundamentalists suggested late in the game that there still was a way out for Argentina: scrap the national currency and adopt the dollar. Dollarization might

have worked better than the currency board did. (The central consideration here is whether the gains from lower interest rates due to reduced currency risk would more than offset the loss in the government's profit from issuing its own currency.) But dollarization could do little to solve the two major problems facing Argentina – its unsustainable fiscal situation and the overvaluation of the currency. Thus, the debate over dollarization was like a discussion about alternative types of cosmetic surgery while the disfigured accident victim was bleeding to death. The only alternative to devaluation was continued recession – and this would have done nothing to stave off default.

The Argentine crisis also suggests lessons concerning international financial contagion and the policies of the IMF. First, the policy community has exaggerated the dangers of currency-crisis contagion. The Asian and Russian crises were special cases that are not typical of international financial markets. Serious contagion can occur, but the norm is milder spillovers that cause ripples, not crises. The lack of serious contagion following both the recent Turkish and Argentine crises illustrates this point.

A second lesson is that IMF cash cannot save countries with overvalued fixed exchange rates. The IMF should not have agreed to Argentina's request for a major loan in the summer of 2001. But exaggerated fears on the part of many political leaders, combined with strong pressures from the United States, led

the IMF to go against the recommendations of many of its top economists.

The cost of such mistaken lending is far more than the wasted money. It damages the credibility of the IMF. Indeed, with its reputa-



tion already tainted by ill-fated loans to Russia, Brazil and Turkey, it is clear the IMF must learn to say “no.”

Ironically, the case for an IMF loan to Argentina may be much better now than before the crisis. The Argentine people, if not their leaders, deserve help in cushioning the blow of the crisis, and the prospect of IMF lending could tip the scales in favor of sensible policies over the statist populism that has for so long been the Argentine way.

But IMF money will help only if the new government is serious about reform. The IMF must remember that actions speak louder than words, and be willing to practice tough love. Argentines will have to decide to make the sacrifices to break away from their statist past. But it is in the interests of the international community to use carrots to nudge them in the right direction. ■

Are Giant Companies Taking Over the US Economy?

Should
We Care?



THE DYNAMIC DUO STUDIO

By Lawrence J. White

Each time the U.S. economy experiences a major wave of large mergers – as it did in the 1980s and 1990s – pundits infer the worst about the impact on the economy’s structure. Are mergers overwhelming decentralizing forces in the market, increasing the risk that some companies will gain market power and that democratic institutions will be undermined? Could this ironic headline to a quarter-century-old *New York*

Magazine article by Andy Tobias – “March 3, 1998: The Day They Couldn’t Fill the Fortune 500” – be coming true?

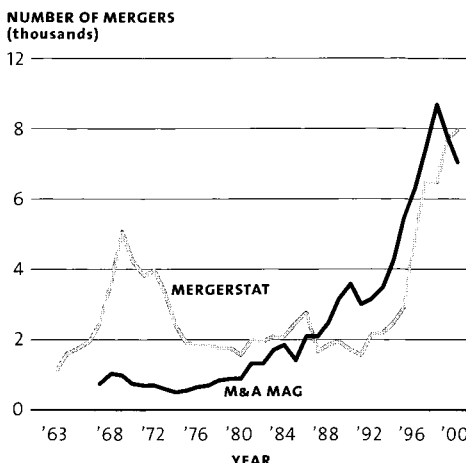
As researchers in this field discovered long ago, data problems as well as conceptual ambiguities make these more difficult questions to answer than one might expect. Here, I attempt to shed new light on industrial concentration – the share of various economic aggregates accounted for by the largest firms – employing two rarely-used sets of data covering the 1980s and 1990s. The numbers show clearly that, despite the recent wave of mergers, aggregate concentration actually declined during the 1980s and early 1990s. It did rise during the mid-1990s, but has only recently approached the levels of the late 1980s. The most intriguing question is why – and what the answers mean for Americans.

THE MERGER WAVE

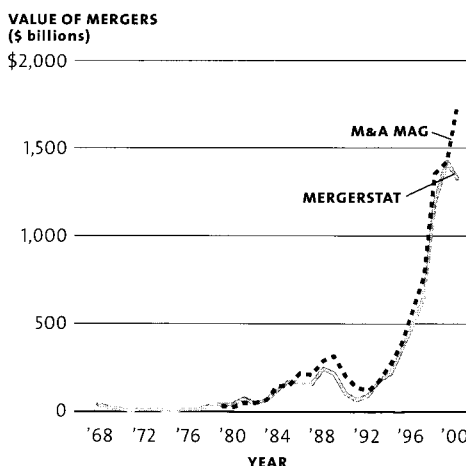
Annual economy-wide data on mergers and acquisitions can be found in two standard sources: Mergerstat Review and *Mergers & Acquisitions* magazine. Both track only large M&As, compiled from news reports; the merger of Nora’s Coffee Shop with Joe’s filling station (“Eat Here and Get Gas!”) will not be included in either data set. Both sources offer data on the annual number of M&As and on the aggregated purchase prices of the M&As. In both, the value series is even less complete than the simple numbers series because transaction terms may not be disclosed for acquisitions involving non-public companies. Since these non-public transactions tend to be the smaller ones, however, the gap is less serious than might be expected.

A wave of large mergers in the 1990s peaked in 1999 or 2000. The *Mergers & Acquisitions* data also show a rise, albeit smaller, in the 1980s, while the Mergerstat data show no such rise in the 1980s but do suggest that the

ANNUAL NUMBER OF LARGE MERGERS



ANNUAL VALUE OF LARGE MERGERS



merger wave of the late 1960s and early 1970s was substantial in sheer numbers.

The data from the two sources are more consistent for the value-of-mergers series; there was a modest wave in the mid-1980s that peaked in the late 1980s and then a far more sizable wave that began in the early 1990s. To put them in perspective, these data should be adjusted for growth in the economy. However, when the data are normalized

MERGERS

by annual GDP or other plausible measures, the graphs show the same patterns. Only when the value of mergers is adjusted by aggregate stock market values does a somewhat different pattern emerge: that the merger wave of the 1990s was no bigger than the wave of the 1980s.

WHY MEASURE CONCENTRATION?

Unease with corporate power has a long history in the United States, extending back at least to the populist movement of the late 19th century and, arguably, back to Jefferson's vision of a nation founded on the values of small farmers. The antitrust laws were one response to these concerns, notably the Sherman Antitrust Act of 1890, the Clayton Antitrust Act of 1914 and the Federal Trade Commission Act of 1914. The states moved against corporate concentration even earlier, prohibiting interstate branching by banks and often limiting in-state branch banking. The idea was to keep banks small and focused on local financing needs.

The populist concern about the growth of large corporations was most tangibly felt through legislation following the stock market crash of 1929 and the onset of the Great Depression. The creation of the National Recovery Administration, permitting nearly a thousand industry groups to develop "codes of fair competition" to discourage price cutting, was designed to protect small businesses from predation. The Robinson-Patman Act of 1936 prohibited price discrimination, with the goal of helping small retailers by preventing their larger rivals from muscling discounts from suppliers. In the same spirit, the Miller-Tydings Resale Price Maintenance Act

of 1937 championed the cause of small retailers, especially pharmacists, eager to limit price-cutting by their chain-store rivals. Even the Agricultural Adjustment Acts of 1933 and 1936 had the preservation of small, family farms as a major goal. After World War II, the Eisenhower Administration established the Small Business Administration to subsidize small businesses. This was also the goal of small-business set-asides for Defense Department procurement and price-support legislation for the long-sanctified family farm.

The beat goes on. In the late 1970s, for example, legislation that would have limited mergers by large firms, even when the maintenance of competition was not an issue, was seriously considered. And the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, which endorsed interstate branch banking, nevertheless limited the fraction of a state's bank deposits that any single institution could hold.

Even setting aside populist concerns, it seems clear that the feel and fabric of a big economy in which, say, only 100 companies accounted for virtually all economic activity would be quite different from one in which economic activity was decentralized. These differences need not be the consequence of market power – the ability to keep prices above cost. After all, if all 100 of these companies had roughly equal presences in all markets, there could hardly be market power. Nevertheless, with only 100 companies accounting for virtually all of private sector gross domestic product in the United States, the average company would employ a million workers and generate \$80 billion in value-added. The landscape for employment opportunities or for the funding of new ideas, for example, would be quite different from that found in a less concentrated economy. Even if there were 1,000 economy-wide com-

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panies and the per-company magnitudes were only a tenth as large as just mentioned, we would still be describing a very different landscape than is present today.

Whatever the nature of the concerns – whether they stem from populist sentiments or some other values – and whether or not any concerns are warranted, information

revenue. This measure seems appropriate for comparisons with non-financial firms. But the employees of financial firms primarily think of firm size in terms of assets – which brings us to another candidate.

Using a firm's assets as the basis for assaying concentration presents unique problems. If banks, insurance companies and mutual

The populist concern about the growth of large corporations was most tangibly felt through legislation following the stock market crash of 1929 and the onset of the Great Depression.

making it possible to track changes in concentration would be useful.

HOW TO MEASURE CONCENTRATION

If large companies raise concern because of their potential economic power, then the total value-added of companies is probably the most relevant measure. Some other candidate measures – payroll or profits – are simply components of value-added. Another candidate, sales revenue, which was popularized by the Fortune 500 rankings, presents obvious problems: merging an upstream oil development company with an oil refiner could have a large effect on the concentration of sales revenue in the oil business, but little or no effect on competition.

Note, too, that the sales concept is poorly defined in the case of financial institutions. Should sales include a brokerage firm's revenue from securities transactions on behalf of its customers? Should it include sales from its own portfolio? In practice, neither category is reported as sales revenue. Instead, financial firms register their interest and fee income, plus any gains from trading operations, as

funds are included, there will be substantial double counting since their assets are largely loans and investments in non-financial companies. These companies, in turn, use these funds to invest in assets of their own. Also, because there are two alternative accounting treatments for M&As, substantially different levels of assets could appear on an acquiring company's balance sheet depending on which accounting method an acquirer chose to use.

Despite the superiority of value-added as an all-around measure, one offsetting factor should be considered: politicians' emphasis on jobs and wage income, and the political clout a company can enjoy if it can promise more jobs or higher wages. Accordingly, a focus on the employment share and on payroll share of large companies within their sectors may well be an appropriate gauge of concentration.

Actual Measures

Unfortunately, value-added data are not widely collected at the company level. The only exception is the Census Bureau's Annual Survey of Manufactures' reporting of the relative

MERGERS

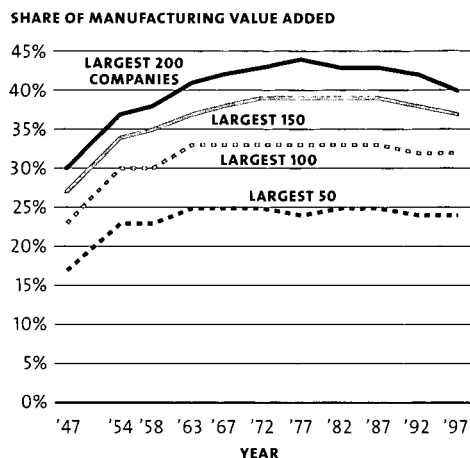
value-added of the 50-, 100-, 150- and 200-largest manufacturers against the base of all manufacturing enterprises for the economic census years 1947 through 1997. But manufacturing has never constituted as much as a third of the private sector and it now yields just one-fifth of private value-added. Consequently, data for manufacturing don't say much about economy-wide concentration.

In the absence of broader company-level value-added data, efforts to measure concentration have focused on employment, profits and non-financial firms' assets. The Fortune 500 lists, introduced in 1954, were based on sales and initially included only manufacturing and mining companies, meaning that firms as large as AT&T were initially excluded. However, the list's reach was expanded in the early 1970s so that economy-wide concentration measures of employment and profits could be compiled for the 1970s on a reasonably consistent basis.

A drawback, however, was that the company data for employment and profits were based on consolidated company reports, and thus included non-U.S. operations of U.S. companies. As a result, the concentration measure – the fraction of U.S. employment (or profits) accounted for by the largest companies – had a numerator that included some non-U.S. employment (or profits). And, so long as the large firms were expanding their non-U.S. operations at a different rate from their U.S. activities, year-to-year comparisons were misleading. Note that *Fortune* changed its coverage yet again in the early 1980s so that measurements for these years were not comparable with those of the 1970s.

Asset data for the 50-, 100-, 150- and 200-largest non-financial companies were compiled by the Federal Trade Commission from 1958 to 1988. But, the data were incomplete

AGGREGATE CONCENTRATION IN MANUFACTURING, AS MEASURED BY VALUE ADDED



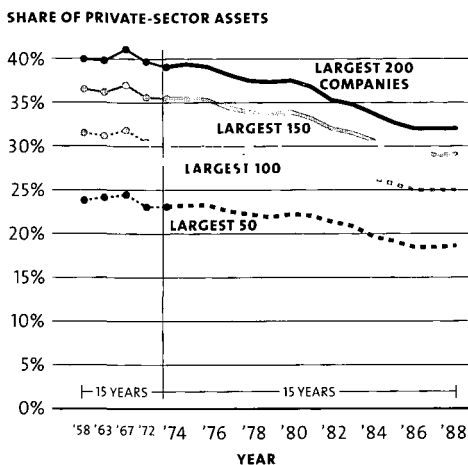
because they excluded financial firms. And, in any case, the numbers had the same drawbacks as other asset measures.

What Did the Earlier Measurements Indicate?

The cleanest data, as well as longest comparable series, have been the Bureau of the Census' value-added data for manufacturing for the economic census years, plus a few additional years, between 1947 and 1997. They indicate a rise in manufacturing concentration between 1947 and 1954, a more gradual rise for the next three decades, and then a decline in the 1990s. By 1997, manufacturing concentration was back to the 1963 level. But, of course, manufacturing was only a modest fraction of the private sector – 31 percent of private gross domestic product in 1947, rising to a peak of 33 percent in 1955 and falling to 21 percent in 1999.

The next longest data series is the FTC's non-financial corporations' assets. These numbers indicate a modest decline in concentration between the late 1950s and the late

AGGREGATE CONCENTRATION IN THE NON-FINANCIAL SECTOR, AS MEASURED BY ASSETS



1970s, and then a steeper decline in the 1980s. Finally, my own work based on the *Fortune* lists shows that concentration in both employment and profits changed little during the 1970s.

And for what it's worth, Andy Tobias' tongue-in-cheek prediction in 1976 didn't come true in the 1980s and 1990s. *Fortune* had no trouble finding candidates to fill out its list of the 1,000-largest companies across all sectors of the U.S. economy ranked by sales revenue for 2000. The 1,000th was Amica Mutual Insurance Company, with 2000 revenues of \$1.2 billion, assets of \$3 billion and 3,316 employees. The largest company in terms of revenue was Exxon Mobil, with \$210 billion; the largest company by assets was Citigroup, with \$902 billion.

THE NEW NUMBERS

My new data come from two sources: a relatively new series encompassing employment and payroll, which has been compiled by the U.S. Census, and the longer-standing, "500" lists compiled by *Forbes*.

The Bureau of the Census Employment and Payroll Data

The census data cover nearly all of the private sector and are disaggregated by major industries. The series begins in 1988, with the data grouped by company size based on employment. At my request, the Census compiled the data for the numbers of firms, employment and payroll for the broad industry sectors for a complete range of size categories that extend to 10,000 and above employees. In addition, the bureau specially compiled the employment and payroll aggregates for the largest 100, 500 and 1,000 economy-wide companies for each year.

The data are not perfect for our purposes. First, they cover only the years since 1988. Second, they cover only employment and payroll, not value-added. Third, they exclude the self-employed, farms, railroads, the Postal Service, households as employers, and large pension and health care insurers. But they offer big advantages over other data series: they are more comprehensive, more consistent from year to year, and they exclude non-U.S. operations while including the U.S. operations of non-U.S. companies. Also, these are the first-ever series to use payroll information for measuring economy-wide concentration.

The total number of companies, as well as their employment and payrolls, grew from 1988 through 1998. The average employment of companies also grew and their average payrolls grew even faster. Employment concentration declined through 1995 and then rose so that by 1998 it was approaching late-1980s levels. The decline in payroll concentration through the mid-1990s was more pronounced than for employment. Despite some increases after 1995 or 1996, payroll concentration was lower in 1998 than it had been in 1988.

Another facet of the employment data is worth noting. Earlier research by John Kwoka

MERGERS

and me found that the fraction of employment accounted for by relatively small firms declined between 1988 and 1996. Since firms with fewer than 500 employees were losing their employment shares even as the largest companies were barely holding their own,

ECONOMY-WIDE NUMBERS, EMPLOYMENT AND PAYROLLS OF COMPANIES

YEAR	AGGREGATE NUMBER OF COMPANIES (thousands)	AGGREGATE EMPLOYMENT (thousands)	AGGREGATE PAYROLL (\$ billions)	AVERAGE EMPLOYMENT PER COMPANY	AVERAGE PAYROLL PER COMPANY (\$ thousands)
1988	4,955	87,844	\$1,859	17.7	\$375.2
1989	5,021	91,626	1,990	18.2	396.3
1990	5,073	93,469	2,104	18.4	414.7
1991	5,051	92,308	2,145	18.3	424.7
1992	5,095	92,828	2,272	18.2	445.9
1993	5,194	94,774	2,363	18.2	454.9
1994	5,277	96,722	2,488	18.3	471.5
1995	5,369	100,315	2,666	18.7	496.6
1996	5,478	102,187	2,849	18.7	520.1
1997	5,542	105,299	3,048	19.0	550.0
1998	5,579	108,118	3,309	19.4	593.1

moderate to large firms in between must have been the net gainers. As a related matter, it is interesting to consider the size-distribution of enterprises in the U.S. economy and how it changed between 1988 and 1998. One good measure is what economists call the Gini coefficient. The Gini coefficients for firms' cumulative employment and payroll shares showed gradual but steady increases between 1988 and 1998, indicating that the distribution of employment and of payroll was becoming slightly more unequal over these years. This pattern is consistent with the loss of shares by smaller firms.

One digression here. For reasons ranging from unionization and supervision issues to skill demands, larger firms have traditionally paid their employees higher wages than smaller firms. That is apparently still true, since the giant firms' share of payroll is still larger than their share of employment. Over

time, however, this differential narrowed considerably. Just why is unclear.

Forbes Magazine Data

Forbes has been compiling "largest 500" lists since 1958. But it never restricted the accounting to industrial companies, and it compiled four different lists based on sales revenue, profits, assets and stock market value. In addition, since 1980 *Forbes* has reported the employment of all of the companies – typically around 800 companies – that ranked in the top 500 on at least one of its lists.

The *Forbes* lists thus have the major advantages over the better-known *Fortune* lists of broader coverage and year-to-year consistency in coverage. But they share with the *Fortune* lists the disadvantage of presenting consolidated company information. This means that the companies' non-U.S. operations are included and companies that are not headquartered in the U.S. – even giants like DaimlerChrysler – are excluded. For our purposes, the advantages outweigh the disadvantages. The opportunity to use a data set with consistent coverage from 1980 through 2000 for the two major components of corporate value-added – profits and employment – is too good to pass up.

Using the *Forbes* data, it is clear that concentration, as measured by the profits of the largest 500 companies trended downward through 1998, and then rose. But the profit shares for 1999 and 2000 were well below those of the early 1980s, and were in the range of the early 1990s. Employment concentration of the 800 or so companies on all four *Forbes* lists trended downward through 1995 and then rose. But concentration in 2000 was well below that of the early 1980s and was comparable to that of the late 1980s and early

1990s. Thus the concentration estimates drawn from the *Forbes* lists are consistent with those based on the Census Bureau data: concentration has not increased since the late 1980s. The *Forbes* data also suggest that concentration has decreased since the early 1980s.

WHAT'S GOING ON?

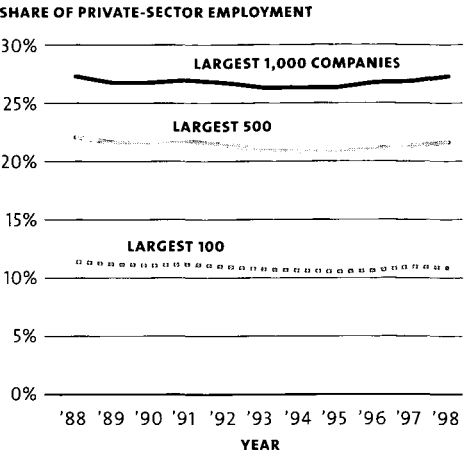
The obvious question here is why, in spite of considerable consolidation, hasn't aggregate concentration increased? Some possible answers may be found in the advantages and disadvantages of firm size. Very large size may be at a disadvantage: a U-shaped rather than an L-shaped average-cost curve (with costs rising beyond some optimal level of concentration) may accurately represent the advantages and disadvantages of size.

By the same token, the net advantages of vertical integration may be overblown – economies of scope in most areas may be weak. CEOs who are empire-minded, or just excessively optimistic, and who are poorly restrained by their boards may create giant firms through mergers and acquisitions. But economic reality eventually intrudes and forces shrinkage and spinoffs.

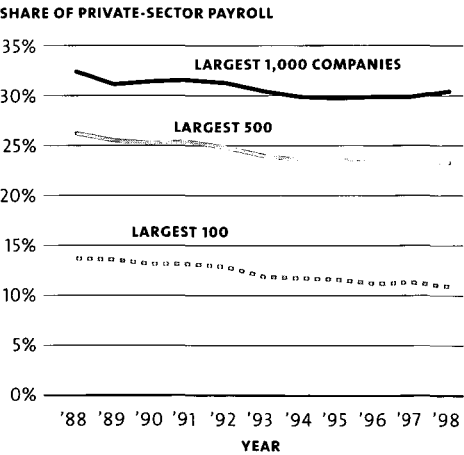
Other explanations may be found in the M&A data itself, which may overstate the extent to which the registered transactions imply an increase in corporate size. First, about a third of the transactions included in the M&A lists are actually divestitures: company A is spinning off a subsidiary. This subsidiary may become a stand-alone entity, in which case concentration decreases. Or it may be bought by another company, in which case concentration can increase or decrease depending on the size of the acquiring company compared to the divesting company. There are no readily available data that would shed light on the impact of divestitures.

Second, a seventh of the M&A totals in-

AGGREGATE CONCENTRATION IN THE PRIVATE SECTOR, MEASURED BY EMPLOYMENT



AGGREGATE CONCENTRATION IN THE PRIVATE SECTOR, MEASURED BY PAYROLL



volve U.S. companies' purchases of non-U.S. companies. If the acquired company has no U.S. activities, such a transaction yields no immediate change in aggregate concentration, as measured by the Census data. Indeed, there could be a decrease in measured concentration if the combined firm achieved

M E R G E R S

company-wide efficiencies that led to a decrease in U.S. employment or investment. The transaction would increase concentration as measured by *Forbes*, however. The acquisition would increase concentration by both measures only if the acquired (non-U.S.) company had U.S. operations.

Third, about a tenth of the M&A totals involve non-U.S. companies' purchases of U.S.-headquartered companies. The immediate consequences for the *Forbes* list has already been noted: the acquired company disappears from the list and the acquiring company does not replace it. Concentration automatically decreases.

The effect on the Census Bureau measure has, again, more nuances: if the acquiring (non-U.S.) company did not have previous U.S. activities, concentration is not affected. If the combined company decreases U.S. operations, measured concentration will decrease. If the acquiring company already had operations in the U.S., aggregate concentration increases, although subsequent rationalization of the combined U.S. operations may yield an offset.

The other noticeable pattern – the rising relative importance of the medium- to large-size firms, but not the giants – may be due to a number of influences.

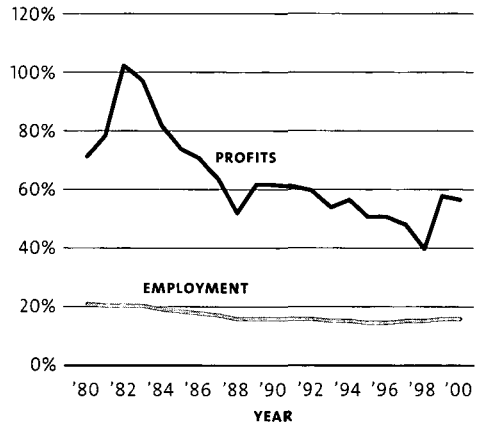
First, in some industries, the importance of sunk costs such as advertising and promotion may be growing, and, as a consequence, the relative advantages of larger firms may be growing as well.

Second, the rising importance of exports for the U.S. has probably given larger firms an advantage since the development and maintenance of overseas markets involve sunk costs and larger firms can more easily subsume these costs.

Third, improved technologies may have

AGGREGATE CONCENTRATION IN THE PRIVATE SECTOR, MEASURED BY PROFITS AND EMPLOYMENT

LARGE COMPANY SHARE OF PRIVATE-SECTOR TOTAL



helped overcome the difficulties of managing large organizations and thus allowed enterprise growth. Finally, the changing importance of the major economic sectors has certainly played a role since the relative importance of large firms in manufacturing was shrinking, while the relative importance of large firms in services was growing.

THE BOTTOM LINE

Companies in the U.S. are, on average, growing larger for perfectly understandable reasons. The merger waves of the 1980s and 1990s may have contributed modestly to that trend. But the giants of industry – the largest 100 or 500 or 1,000 corporations in the U.S. – have not been growing appreciably faster than the overall economy; if anything, they have been growing a bit more slowly.

The U.S. economy remains one in which there are a large number of enterprises – over 5.5 million at the end of the 1990s. Their numbers are growing and they come in a wide variety of sizes.

That's surely a healthy bottom line.



Free Trade Under Fire

BY DOUG IRWIN

To students suffering through Econ 101, the four dullest words in the English language are “General Agreement on Tariffs and Trade” (the “on” is pretty dull, too). Yet the World Trade Organization, which evolved from the GATT, seems to evoke a very different response. Indeed, to many stranded on the left as the political mainstream drifted right, the WTO symbolizes all that is wrong with global capitalism. ¶ Doug Irwin, who teaches economics at Dartmouth, has spent much of his career demystifying the unintuitive realm of international trade. In *Free Trade Under Fire*, he continues the job, patiently analyzing the logic behind the backlash against open trade in general and against the impact of the WTO in particular. Think of it as the antidote to the opportunism and know-nothingism of the anti-globalism movement. — Peter Passell

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When what was

called the Uruguay Round of trade negotiations was launched in 1986, the mood was one of guarded optimism – at best. Many observers believed that the General Agreement on Tariffs and Trade was crumbling, and blamed the proliferation of restrictions not covered by trade rules, such as voluntary export restraints. Moreover, countries seemed increasingly unwilling to adhere to existing rules.

Yet when the negotiations were concluded in December 1993, the resulting agreements turned out to be the most successful and comprehensive since the formation of the GATT after World War II. As in previous negotiations, participating countries agreed to reduce tariffs on merchandise. Developed countries reduced tariffs on industrial products (excluding petroleum) by about 40 percent, bringing average tariffs in those countries down to 3.8 percent. The remaining tariffs are highly uneven across sectors – relatively low on sophisticated manufactured goods but substantially higher on labor-intensive manufactured goods. Developing countries reduced their tariffs by 20 percent on average, bringing their average rates down to 12.3 percent.

More important, the Uruguay Round incorporated trade in previously exempt goods. Reform of agricultural trade had eluded negotiators ever since the GATT's formation, because of the political sensitivity of domestic support for farmers. The Uruguay Round agreement limits export subsidies and internal price supports by capping and then reducing these outlays. It also requires countries to convert all non-tariff barriers (like import quotas and voluntary export restraints) into a single import tariff. After this tariffication, the levies are to be reduced by an average one-third for developed coun-

tries and by one-quarter for developing countries over 10 years.

The resulting tariffs, however, are incredibly high. Many countries used the process of conversion as an opportunity to cheat, raising tariffs above the existing combination of non-tariff restrictions. This practice, known as dirty tariffication, meant that the actual liberalization in agriculture was slight. Still, the agreement on agriculture constituted a critical first step.

The Uruguay Round also abolished the Multifiber Arrangement, the web of export restraints and import quotas that clogs trade in textiles and apparel. The arrangement is to be phased out over 10 years. Yet because much of this liberalization occurs at the end of the transition period, many observers are skeptical that developed countries will have the political will to meet their commitments. Even if the Multifiber Arrangement is abolished, the United States and other developed countries will continue to protect their textile and apparel producers with high tariffs and antidumping measures.

The Uruguay Round made little progress in regulating the use of antidumping laws, but countries did pledge not to “see, take or maintain any voluntary export restraints, orderly marketing arrangements or any other similar measures on the export or the import side.” If adhered to, this provision will constitute a

major improvement in discipline.

The negotiations also produced a General Agreement on Trade in Services (GATS) and established rules regarding trade-related investment measures (TRIMs) and trade-related intellectual property (TRIPs). Although these agreements are weak by the standards of the GATT, they constitute the first attempt to extend the principle of non-discrimination to new areas of international commerce.

The core obligations in the GATS are set around three principles: most-favored-nation treatment (assuring that all nations will face equivalent tariffs), market access, and national treatment. The main sectors include telecommunications, financial services, air and maritime transport, and construction. Although the agreement contains specific commitments to liberalization, coverage is incomplete because the important provisions of the GATS apply only to the sectors specified by the member countries.

In making national treatment the standard for regulating foreign investment, the TRIMs agreement was even more modest. The agreement aims to eliminate quantitative restrictions on foreign investment, including limits on the share of foreign ownership in certain industries. Because of opposition from developing countries, there was no attempt to consider issues such as the right of firms to establish enterprises in other countries, or the elimination of trade-related performance requirements on foreign investment.

The TRIPs agreement consolidates previous international accords protecting copyrights, trademarks, patents and industrial designs, and provides for enforcement of these agreements by the WTO. But protection of intellectual property is not, strictly speak-

ing, a trade issue that naturally belongs under the purview of the WTO, especially given the existence of the World Intellectual Property Organization. And many developing countries complain that, unlike mutually beneficial tariff reduction, the TRIPs agreement merely transfers income from developing to developed countries by strengthening the ability of multinational corporations to charge higher prices in poorer countries. In



in addition, using trade policy to protect intellectual property makes it harder to reject demands to use them to enforce other non-trade objectives, like environmental or labor standards, and thus puts the WTO in the business of enforcing behavior in areas only tangentially related to trade.

Under the Uruguay Round agreements, special and differential treatment for developing countries is limited. Although the resulting obligations are extensive, they are apparently less than the costs of remaining outside the agreement and losing the benefits of most-favored-nation treatment by other countries. Hence membership in the WTO has become increasingly attractive. At the start of the Uruguay Round in 1986, the GATT consisted of 91 contracting parties.

The WTO was established in 1995 with nearly 130 members, and by early 2001 its membership had risen to 140 nations, accounting for over 90 percent of world trade. Another 30 countries want to join.

The Uruguay Round was the first in which developing countries played an active role, and their participation helped to shape the outcome. Developed countries agreed to abolish the Multifiber Arrangement's clothing quotas and to reform agricultural trade, increasing trade in sectors where developing countries have what economists call a comparative advantage. In return, developing countries accepted rules in the new areas of trade where developed countries have a comparative advantage.

This exchange came to be known as the grand bargain. However, developing countries increasingly view the grand bargain as a bad deal; they took on many new obligations in services, investment and intellectual property, while developed countries have yet to grant significant access to markets in agriculture and clothing.

The developing countries are now more skeptical about the benefits of multilateral negotiations, particularly if developed countries force them to consider labor standards in future negotiations. As developing countries become more assertive in the WTO, the developed countries will have to be more sensitive to their concerns or the differences between the two could become a serious obstacle to completing the recently commenced Doha Round of trade negotiations.

THE WORLD TRADE ORGANIZATION

The WTO was established in 1995 by the Uruguay Round agreement. It has been a much more visible and controversial organization than the GATT, so it is important to get a sense of what the organization, and particu-

larly its dispute settlement mechanism, is all about.

The scope of the WTO is broader than that of the GATT because it oversees multilateral agreements relating not just to goods, but also to services, investment and intellectual property. But like the GATT, it has virtually no independent power; authority to make trade policy and to write the rules governing it resides with the member governments.

What most distinguishes the WTO from the GATT is the dispute-settlement process. The original GATT made little provision for settling disputes. When conflicts arose, an informal process was developed to resolve them through negotiation. As it evolved, the GATT would often convene a panel of experts to arbitrate a dispute and to interpret GATT rules. But panels would leave a solution to the parties themselves. Over time, these flexible procedures became more complicated and the growing body of case law was viewed as establishing legal precedent.

The Uruguay Round agreement largely formalized existing practices. But it also strengthened the dispute resolution process. The GATT had operated by consensus. As a result, a country accused of violations could block the establishment of a panel or, if a panel were set up, could veto the adoption of the panel's report. Under the WTO, the creation of a panel and the adoption of its report now go forward automatically unless there is a consensus in opposition.

Under the new settlement mechanism, countries file violation complaints, alleging that specific rules (such as nondiscrimination) have been violated, or nonviolation complaints, alleging that a government action "nullifies or impairs" a previous concession, even if no specific rule has been broken. If initial efforts to resolve the dispute are not successful, a three-member panel is appointed to

determine whether WTO rules have been violated. The panel's decision can be appealed to a formal group known as the Appellate Body.

As under the GATT, if the policy in question was found to violate the rules, the offending country could bring its policy into conformity with the rules, or keep the policy

found that most led to beneficial changes in foreign regulations and practices and that "none of the changes the United States has made in response to WTO disputes have had major policy or commercial impact to date."

In Washington, there is a tendency to judge the success of dispute-settlement mechanism

The fact that small countries can receive fair treatment under the rule of law is a strength of the world trading system.

in place and offer compensation (lower tariffs) on other goods exported from the complaining country. In the latter case, the complaining country then has the option of accepting or rejecting the compensation offer. If neither alternative has been implemented, the complaining country can retaliate by withdrawing previous tariff concessions to the country that has chosen not to comply with the finding. Such retaliations occur infrequently because most disputes are settled through negotiations.

The dispute-settlement process was strengthened in the Uruguay Round largely because the United States Congress insisted on it. In the first five years of the WTO (1995-99), the United States filed 49 complaints and was the object of 35 complaints. Of the 49, fully 25 had been resolved by the end of 1999 – 13 through favorable rulings by WTO panels and 10 through negotiations. Of the 35 complaints brought against the United States, only 7 had been completed by the end of 1999, and in 6 of them some aspect of United States policy was found inconsistent with WTO rules.

The dispute-settlement process has worked well for the United States. Examining 42 cases, the U.S. General Accounting Office

only by whether the United States "wins" the cases. But sometimes the United States deserves to lose. For example, in 1995 Costa Rica won a complaint against the United States concerning restrictions on imports of underwear. The fact that small countries can receive fair treatment under the rule of law is a strength of the world trading system. The alternative is that more powerful countries simply dictate outcomes to others.

But even when the United States loses, the WTO cannot force change in United States laws, regulations or policies. WTO panels merely determine whether disputed policies conflict with WTO rules and, if they do, recommend that members bring those policies into conformity. The disputing countries must still resolve the matter themselves, often through a negotiated settlement.

Many nongovernmental organizations, particularly environmental groups, have complained that the WTO is secretive and antidemocratic in its procedures. Although they are now allowed to file "friend of the court" briefs, nongovernmental organizations are generally barred from the dispute-settlement process. This is because the WTO agreements are government-to-government agreements that deal with government policy, not

with the behavior of private firms.

ENVIRONMENTAL REGULATIONS AND WTO RULES

Several dispute-settlement rulings have raised questions about whether WTO rules take precedence over domestic environmental, health and safety regulations. Unfortunately, passionate opposition to certain rulings has given rise to much exaggeration and distortion. For example, Public Citizen's Global Trade Watch charges that "in the WTO forum, global commerce takes precedence over everything—democracy, public health, equity, the environment, food safety and more."

That assessment is clearly wrong. As of 1999, fewer than 10 disputes brought before the WTO dealt with environmental or health issues. And these few environmental cases mainly focused on whether the regulation in question had been implemented in a nondiscriminatory way—not whether the regulation was justified. However, some cases do illustrate the difficult issues and potential conflicts that can arise when trade and environmental policy intersect.

Article 20 of the GATT allows countries to enact and enforce measures that restrict trade in order to achieve various objectives, provided the measures are nondiscriminatory, do not constitute a disguised restriction on international trade, and are necessary to achieve the stated objectives. Subsections of Article 20 specify objectives that would justify measures to constrain trade. The most important permit regulation to protect human and animal health, and to conserve natural resources.

A handful of the WTO's environmental cases have become notorious. Here I consider two of them in detail because popular discussion of them has been both emotional and superficial. If the United States insists upon receiving fair treatment abroad, it cannot be

surprised that other countries demand non-discriminatory treatment from the United States. This appears to be an uncontroversial proposition. Yet Public Citizen's most widely trumpeted example of the WTO's weakening of United States environmental regulations involves precisely this issue.

The Reformulated-Gasoline Case

The Global Trade Watch book, *Whose Trade Organization?*, accuses the WTO of forcing the United States Environmental Protection Agency to weaken its standards on imported gasoline. This case, the authors argue, is "an example of how the WTO could be used to skirt a country's democratic policy-making and judicial systems ... [and] was the first concrete evidence of the WTO's threat to environmental policy and to national sovereignty in setting and effectively enforcing important policies."

Yet the case did not involve the stringency of the EPA's regulation, but simply its nondiscriminatory implementation. In December 1993, the EPA issued a regulation to reduce contaminants in gasoline, with the goal of limiting engine emissions. Each domestic refiner was required to meet a new, more stringent standard based on its own 1990 quality level. This individual standard was chosen because a single industry-wide baseline would have made compliance very costly for some domestic oil refiners.

However, foreign refiners were not offered a similar option. As an EPA administrator later testified before Congress, the agency thought "that it was appropriate, if we had a choice, to lean in the direction of doing something that would favor their competitive position [i.e., that of domestic refiners] vis-a-vis the [foreign producers]."

In other words, the EPA built in discrimination to help domestic refiners compete

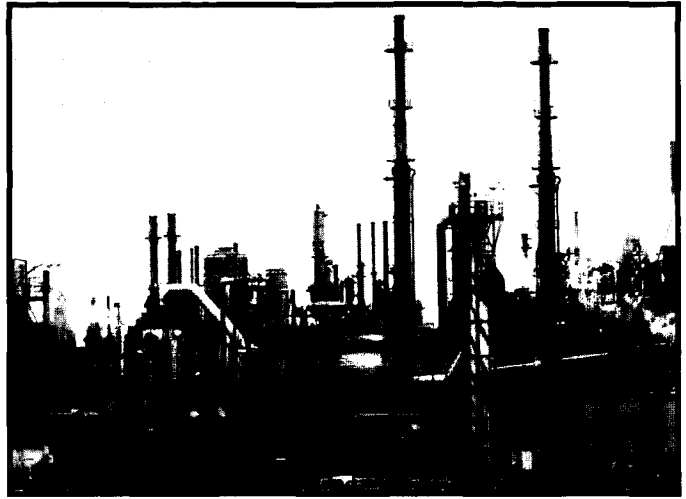
against foreign refiners. In 1995, Venezuela and Brazil complained to the WTO. A WTO panel ruled against the United States, which then appealed. The WTO's Appellate Body recommended that the regulation be brought into conformity with WTO obligations, but left how it would comply up to the United States.

The United States could have ignored the Appellate finding, let the regulation stand, and offered compensation to Venezuela and Brazil in the form of lower tariffs on other products, or brought the regulation into conformity with the WTO rules. If the United States had chosen to ignore the ruling, Venezuela and Brazil could have withdrawn previous tariff concessions extended to United States goods, equivalent in value to their lost gasoline exports.

The second possible United States response would have been to keep the existing regulation in place, but to compensate Venezuela and Brazil by lowering tariffs against other goods. But this response would have required lowering tariffs on another industry – an unlikely outcome. As one trade lawyer explains, “imagine the United States Trade Representative explaining to an industry why the United States had agreed to lower tariffs on its products in order to keep in place a discriminatory rule that favored the oil industry.” Hence the United States chose to bring the regulation into conformity with the WTO non-discrimination requirement. This could have been accomplished by requiring domestic refiners to meet the same uniform baseline that applied to imports, but the domestic industry did not want this option. Instead, in August 1997 the EPA allowed foreign refiners to use indi-

vidual baselines.

Note again that the EPA could have resolved the case by raising the domestic standard, rather than lowering the import standard. Thus, the case is far from one in which the WTO undermined domestic environmental regulation, as Global Trade Watch claims. The United States may have lost this case. But



the system worked as Washington wanted, leaving the United States free to invoke the same rule against discriminatory regulations in other countries.

Finally, it is important to put the stakes in this case in perspective: the United States imported just 3.7 percent of the total United States supply of refined gasoline in 1998.

The Tuna-Dolphin Case

In 1991, a GATT panel ruled that a United States ban on imported tuna caught without using dolphin-safe methods was inconsistent with GATT rules. In a sense, this case is now completely moot: it was decided under the old GATT (rather than WTO) rules, it did not force any change in United States policy, and it was later resolved through negotiations. But the case is important because the panel's legal

interpretation continues to cast a shadow over the debate about conflicts between environmental and trade rules.

Dolphins had long been accidentally killed by tuna fisherman who use purse-seine fish-



ing nets. Under the Marine Mammal Protection Act, the United States established dolphin-protection standards for the American fishing fleet and for countries fishing for yellowfin tuna in parts of the Pacific Ocean. The Act required that the United States ban the importation of tuna from countries that failed to meet United States standards.

Mexico objected, and in 1991 requested that a panel review the case. Mexico argued that the ban violated prohibitions against quantitative restrictions or embargoes on goods from other member countries. It noted that dolphins were not an endangered species, and that no international agreement forbade the use of purse-seine nets. All 11 countries making representations to the panel supported Mexico.

The United States was outnumbered mainly because other countries objected to the unilateral nature of the ban. They believed that by imposing such standards, the United States was trying to force other countries to adhere to America's view of how non-

American resources should be protected.

The United States argued that the import restrictions were justified under GATT rules allowing the enforcement of domestic regulations at the border and allowing trade measures to protect health and safety and to promote conservation. The GATT panel rejected both defenses. The panel ruled that the trade restrictions justified by the GATT rules applied only to products as such, and not to the process by which they were produced. This distinction became known as the "product-process" doctrine. Because tuna caught by dolphin-safe methods were the same as tuna caught by dolphin-endangering methods, the panel saw no legal basis for differentiating between them.

The panel also ruled that GATT rules did not allow a country to take trade actions for the purpose of enforcing its own standards in another country. Finally, the Article 20 defense failed because the measure was not shown to be necessary since other GATT-consistent options (such a multilateral negotiations) had not been explored. (The ruling in a parallel case brought by the European Community in 1994, known as Tuna-Dolphin II, backed much of the Tuna-Dolphin I ruling.)

Under the old GATT dispute system, a panel report was not official until adopted by the GATT Council. Mexico did not pursue the panel decision further, and the United States blocked adoption of the Tuna-Dolphin II panel report. The United States import ban remained in place. The tuna dispute was resolved in 1992 when the United States, Mexico and eight other tuna-fishing nations signed an international agreement to regulate tuna fishing. Since then, incidental dolphin

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deaths due to tuna fishing have dropped dramatically.

LESSONS FROM THE ENVIRONMENTAL CASES

Although there may be tensions between trade policy and environmental objectives, world trade rules are not inherently anti-environmental. Several less-publicized decisions reaffirm that the rules allow countries to maintain consistent and nondiscriminatory environmental regulations. For example, in 1994 a GATT panel affirmed that the corporate average fuel-economy standards regulating the fuel efficiency of automobiles sold in the United States were a perfectly acceptable form of regulation to protect public health and environment – as long as those standards did not explicitly discriminate on the basis of country of origin. Similarly, a WTO panel in 2000 upheld France's ban on asbestos imports on the grounds that they involved hazardous materials, after Canada had challenged the embargo.

The product-process doctrine that prevents consideration of how tuna are fished is a source of great concern. The doctrine, never explicitly propounded or endorsed by WTO members, gradually took on a life of its own. The distinction is unsustainable because process-based regulation has already been introduced in the agreement on trade-related intellectual property. For example, original and copied software are similar products, but the process by which they were produced is quite different. Besides, many people in developed countries care about how products are made: tuna may be tuna, but tuna caught with dolphin-safe methods is not viewed as identical to tuna caught with dolphin-unsafe methods.

At the same time, there are sound reasons for not allowing any and all process regula-

tions. Developing countries fear that if the method of production of a particular good becomes grounds for blocking trade, then labor and environmental conditions will be introduced as excuses for keeping out their products.

Another lesson is that unilateral trade sanctions are a poor instrument for achieving environmental objectives. Sanctions would not prevent a country from diverting tuna caught with harmful methods away from the United States market toward other markets that would accept them. In the end, international agreements on standards are clearly preferable to trade embargoes, and a global approach must be taken in negotiations because the lack of cooperation by a few key countries can undermine the goal.

When other nations are reluctant to negotiate, the carrot of subsidies rather than the stick of sanctions can promote the adoption of safer production methods. For example, a straightforward solution to the dolphin problem would have been to subsidize dolphin-safe nets for use around the world. Rather than spending millions of dollars on legal fees to solve the problem through compulsion, a combination of foreign aid, World Bank assistance, and nongovernmental organizations' financial resources should have been pooled to give these dolphin-saving technologies to fishermen in developing countries. There should be enough common ground between the trade policy and the environmental community to work out these differences.

What has become clear is that it will not be acceptable to ignore environmental concerns when there appears to be a global consensus on those concerns. Effective environmental and safety regulations should not be blocked simply because they reduce international trade. The notion that all trade must be kept free at all costs is simply wrong.

PUBLIC HEALTH AND THE BEEF-HORMONES CASE

World trade rules do not stand in the way of government action to protect public health. When the United States banned imports of livestock and meats from Europe in 2001 because of fears of mad-cow disease and foot-and-mouth disease, the action was legal according to WTO rules. Yet public health is sometimes used to justify regulations intended only to protect special interests.

The use of public health as an excuse for protectionist regulations is not a new problem. In the late 1980s, for example, many European countries banned American pork after rumors spread that it was infected with trichinosis. Today, the United States and other countries still maintain trade barriers that are ostensibly designed to protect public health, but are actually for the benefit of producers. The Department of Agriculture estimates that questionable foreign regulations cost the United States about \$5 billion in agricultural, forestry and fishery exports in 1996.

The United States-European Union dispute over hormone-treated beef is a classic example of the difficulty in drawing the line. The conflict began in 1985, when Europe restricted the use of natural hormones for therapeutic purposes and banned the use of synthetic hormones for growth purposes in cattle and meat sold in the European Union. At the same time, the European Union prohibited imports of animals or meat from animals that had been treated with such hormones. Thus the regulation seemed non-discriminatory because the same standard was applied to domestic and imported meat.

Implemented in 1989, the measure wiped out about \$100 million in American beef exports to Europe. The United States strenuously objected, arguing that the European Union ban was unjustifiable because the hor-

mones had been found safe when used in accordance with good practices of animal husbandry. Efforts to resolve the dispute under the Tokyo Round's Agreement on Technical Barriers failed because it dealt only with end-product characteristics, and naturally occurring hormones cannot be distinguished from cattle and beef treated with supplemental hormones. As a result, the United States retaliated in 1989 by imposing 100 percent tariffs on \$100 million of agricultural imports from Europe.

The United States sought to clarify international rules on health and safety regulations during the Uruguay Round, and the result was the Agreement on the Application of Sanitary and Phytosanitary Measures. The agreement provides that trade-related sanitary measures should be based on scientific principles and should not restrict trade more than required to achieve the appropriate level of health protection. In addition, it states that governments "shall avoid arbitrary or unjustifiable distinctions ..."

The United States, supported by Australia, Canada and New Zealand, used the agreement to challenge the European Union's ban on beef imports, arguing that the ban failed to meet any of these requirements. The WTO five-scientist panel concluded there was no public health risk.

The record also showed that high levels of several of the hormones occurred naturally in animal products, and yet these products were not regulated. For example, of the six hormones at issue, the one identified as most dangerous by the European Union is found in concentrations from 10 to hundreds of times greater in eggs, cabbage, broccoli and soybean oil than in hormone-treated beef. Why was the sale of eggs not banned, since there is 34 times more naturally occurring hormones in a single egg than in a pound of beef?

According to the United States, the real motivation for the ban was to protect domestic beef producers from foreign competition and to reduce surplus beef supplies in the European Union. If consumer health were the true motivation, then the European Union should not have continued to allow the use of growth additives by its competitive pork producers instead of disallowing it only in its less-competitive beef industry.

The European Union claimed that the United States was simply attacking the level of protection provided. It argued that the ban was based on the precautionary principle – the view that if scientific evidence did not establish beyond a doubt that the hormone residues were safe, then a ban was appropriate.

In 1997, the WTO panel ruled that the hormone ban was not based on scientific evidence or on a risk assessment, and therefore was inconsistent with the European Union's obligations under the agreement. The Appellate Body reaffirmed that decision in 1998. In 1999, after the European Union failed to implement any changes in policy, the United States imposed 100 percent tariffs on European imports valued at nearly \$120 million, the estimated annual amount of lost United States beef exports.

As already noted, the rules allow trade restrictions with the proviso that they be imposed in a nondiscriminatory fashion, but also that they are not “a disguised restriction on international trade.” Discrimination was never an issue in this case, because the use of hormones was forbidden in domestic as well as in imported meat. The question is whether the measure was a disguised restriction on trade. The problem is that this standard is virtually impossible to use because it gets to the unobserved motives behind a trade action.

Negotiated rules are a useful way to define common ground, but countries are bound to



have different assessments of the risk trade-offs involved in any given regulation. For example, the United States and European Union have different assessments of the risks of genetically modified foods. In Europe, a food is under suspicion until proven safe, whereas in the United States a food is acceptable until proven harmful. These different approaches cannot be easily reconciled. The question is how far WTO members want to go in limiting the ability of governments to adopt trade restrictions when supporting scientific evidence does not exist or is ambiguous.

THE ECONOMICS OF LABOR STANDARDS

The world trading system has also come under attack for omitting labor standards from trade agreements and thus allegedly failing to protect workers. Demands for labor standards are not new, but have recently come to the forefront of the debate over trade policy.

Student activists, human rights groups and other nongovernmental organizations have decried the poor working conditions in developing countries, and are sharply critical of multinational corporations for failing to pay

what they consider living wages. Labor unions in the developed countries have long maintained that countries with lower labor standards have an unfair competitive advantage in trade, and that they attract investment at the expense of countries with higher standards. Most developing countries, by contrast, fear that if countries are allowed to restrict imports from others deemed not to have adequate labor standards, developed

than 10 percent of that in the United States. Thus multinationals generally find it profitable to turn to developing countries only for unskilled, labor-intensive activities – particularly those in which the productivity of workers is comparable to that in developed countries, but the average wage they have to pay is much less.

As developing countries improve the productivity of their workers through the acqui-

The fundamental problem facing workers in developing countries is not the existence of foreign sweatshops, but the lack of good alternative employment opportunities at home.

countries will have yet another excuse for denying low-wage countries access to their markets.

It is worth examining the claim that low wages give a country an unfair advantage in trade. Low wages generally reflect low labor productivity. Econometric evidence has regularly shown that labor productivity alone explains about 70 to 80 percent of the cross-country variation in average wages in manufacturing. After also accounting for differences in per capita GDP and in price levels across countries, over 90 percent of the variation in wages between countries can be explained.

Since average wages reflect average productivity, the cost advantage of low wages is generally offset by the cost disadvantage of low productivity. This implies that labor costs per unit of output are roughly comparable across countries. In India and the Philippines, for example, average wages are less than 10 percent of those in the United States, but the average productivity of workers is also less

sition of better technology or other mechanisms, competitive pressures bid up wages. As a result, the growth in domestic wages tracks the growth in domestic productivity. Indeed, a country's average wage rate is determined almost exclusively by domestic productivity performance.

Low wages and poor working conditions in developing countries have sparked protests from concerned citizens in developed countries. The Worker Rights Consortium, established by students, unions and human rights groups, has accused Nike and other multinationals of subjecting workers to sweatshop conditions and not paying a living wage.

Working conditions in many developing countries are indeed horrible by the standards of developed countries, and everyone wants to see them improve. Still, the most direct way to raise wages and improve working conditions is to enhance productivity through economic development. Trade and investment are important components of that development, and therefore efforts to limit interna-

tional trade or to shut down sweatshops are counterproductive. Most foreign-owned firms pay higher wages than comparable domestic firms. The “sweatshops” in poorer countries also pay better than the local labor market, which may explain the low turnover rate of workers at such firms.

The fundamental problem facing workers in developing countries is not the existence of foreign sweatshops, but the lack of good alternative employment opportunities at home. Efforts to stop exports from low-wage countries, to prevent investment there by multinationals, or to impose minimum wages or benefits that exceed the productivity of the domestic work force will simply diminish the demand for labor and take away workers’ opportunities.

SHOULD TRADE AGREEMENTS HAVE LABOR STANDARDS?

Almost alone, the United States has pressed for considering labor standards in trade negotiations. Two categories are typically discussed. Core standards, such as a prohibition on forced labor, are related to fundamental human rights and can be universal in their application. Economic labor standards, by contrast, are tied more closely to a country’s level of economic development and include minimum wages and working conditions.

Core labor standards have been defined by the International Labor Organization, an international body created in 1919 and composed of member governments, employers and workers. In 1996, the ILO issued a Declaration on Fundamental Principles and Rights at Work, stating that all countries are obliged to promote freedom of association and the effective recognition of the right to collective bargaining, the elimination of all forms of forced labor, the abolition of child labor, and the elimination of discrimination

in employment and occupation.

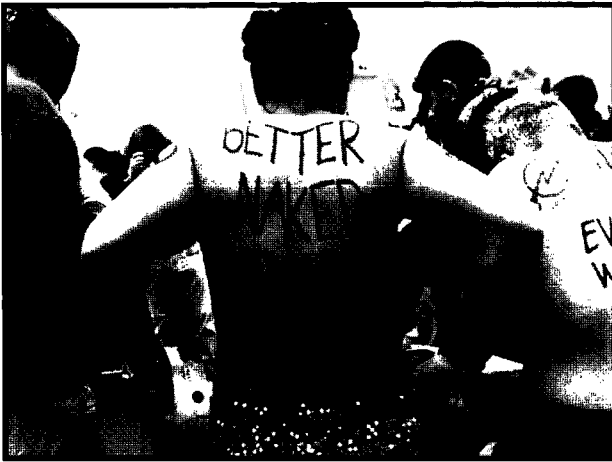
However, with the exception of slavery, there is remarkably little agreement about the meaning of these standards or how they should be implemented. The ILO oversees more than 180 conventions on aspects of labor rights and practices, but few have been ratified by all ILO members.

As of early 2001, for example, the United States had ratified just 14 and had agreed to only two of the core conventions (on the abolition of forced labor and the prohibition of the worst forms of child labor). This is partly because domestic labor law is largely the prerogative of state governments, and partly because the language of the conventions may conflict with national policy. For example, convention 111, which seeks to abolish employment discrimination on the basis of sex and race, has not been ratified by the United States because it might conflict with affirmative action.

Child labor has been a particularly controversial issue, and illustrates the limits of using ILO conventions and trade policy to reduce this practice. The United States prohibits imports made with forced child labor, but does not have a generic ban on imported goods made with child labor. Indeed, dealing with non-exploitative child labor is a more difficult issue. The ILO charter establishing minimum ages of work has not been ratified by the United States, Canada or other developed countries because of differing national views on the details. For example, Canada chooses not to prohibit work at night for children under the age of 13.

Of course, child labor is a major issue in developing countries, and some activists have suggested that developed countries should refuse to import any goods made by children. A ban on imports made with child labor might stop their employment making goods

for the United States market, but it would not put an end to child labor. Only about 5 percent of working children are employed in the export sector in developing countries. An import ban might simply shift them to other sectors of the domestic economy (about 80



percent are employed in the primary agricultural sector).

About 80 percent of the international variation in child labor is explained by per capita GDP. Child labor virtually disappears once a country's per capita income reaches \$5,000. Developed countries could help developing countries raise incomes by allowing them to sell their products more easily in richer economies. Instead, developed countries have maintained high trade barriers on agricultural goods and clothing – precisely the goods in which developing countries have a comparative advantage.

THE POLITICS OF LABOR STANDARDS

Political pressures in developed countries push governments to go beyond core standards and into the realm of economic standards. Labor unions and other nongovernmental organizations have pressed for minimum wages, employment hours, occupation-

al health and safety regulations, minimum age of employment, and so on. Without these standards, it is argued, developing countries will attract investment and gain jobs at the expense of developed countries – which will then face pressures to reduce labor standards.

Such economic standards, however, have no place in a trade agreement because they are a function of economic development.

At the 1996 WTO meeting in Singapore, the United States pressed for the creation of a working group on labor standards. Responding to sharp opposition by developing countries, the WTO agreed that the ILO was the more appropriate venue for considering labor standards. Despite this agreement, the United States again called for an examination of labor standards by the WTO at the 1999 Seattle ministerial meeting. Developing countries were again hostile, and even Canada failed to support the United States. When President Clinton let slip the idea that labor standards should be included in trade agreements and enforced with trade sanctions, developing countries accused the United States of bad faith in ignoring the Singapore declaration and were galvanized to oppose any new trade round on this basis. The President's statement thus almost single-handedly ensured the failure of the Seattle meeting.

There are inherent flaws in giving the WTO missions not related to trade, like enforcing environmental agreements or minimum labor standards. The risk is that these poorly targeted and indirect instruments will fail to achieve their objective, while at the same time they will expand the allowable rationales for trade barriers – and thus undermine the liberal trading system without generating compensating benefits.

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SAVINGS AND LOAN REPRISÉ

Some 50 specialists in financial services gathered at UCLA on Jan. 25 to assess the lessons of the 1980s S&L mess for financial institutions, markets and regulation in the years ahead. The give and take at the invitation-only meeting, co-hosted by the Milken Institute and UCLA's Anderson School of Management, reflected the diverse backgrounds of the participants. Some argued that today's financial markets are in much better shape than they were 20 years ago, while others asserted that not nearly enough has been done to prevent future problems.

The glass-is-half-full view was expressed most clearly by James Wilcox of the University of California's Haas School of Business. Among the lessons learned:

The value of diversification. We have seen what happens when institutions are not permitted to diversify their investments. Diversification across sectors, geographic regions and services, all make a difference

The need for risk management. We now have a much better understanding of how much interest rate and credit risk are in the system, and how these risks can be handled. Financial institutions have more latitude to hedge now than they did 20 years ago.

The imperative for closure. Instead of letting firms try to grow out of problems, we should opt for "reincarnation" – reorganizing struggling institutions, bringing them back with different managers, different owners and perhaps different balance sheets.

Other participants, including Susanne Trimboth of the Milken Institute, were less



Susanne Trimboth speaking with Bruce Willison.

sanguine. In the long term, she noted, the share of U.S. financial assets held by banks and thrifts is falling. "We might well look to pension funds and mutual funds as the next set of institutions to become vulnerable if a conflict arises between asset classes and market conditions," she argued. A forced divestment of company stock from pension plans, for example, could leave those financial institutions vulnerable.

"Exactly the same things happened in Superior," a recently failed Chicago thrift, as happened in the 1980s, seconded George Kaufman of the Center for Financial Studies & Policy at Loyola University. Kaufman appends to Santayana's admonition that those who forget history are bound to repeat it. "What do those who do remember do? ... they agonize first and then do it again."

To focus the discussion, the day included sessions on government policy, the public record, and the parallels in international banking. The final session summarized the day's discussion.

Participants

Bruce Willison Dean, Anderson School of Management, UCLA • **Michael Klowden** President and CEO, Milken Institute • **Timothy Anderson** Former banking consultant • **James Barth** Auburn University and Milken Institute; formerly Chief Economist, Office of Thrift Supervision and Federal Home Loan Bank Board • **Philip Bartholomew** International Monetary Fund; formerly Federal Home Loan Bank Board; U.S. House Banking Committee • **Gordon Bjork** Economics Department, Claremont McKenna College • **Elijah Brewer** Federal Reserve Bank of Chicago • **R. Dan Brumbaugh** Milken Institute; formerly Federal Home Loan Bank Board • **Charlotte Chamberlain** Jefferies & Company; formerly Federal Home Loan Bank Board • **Michael Darby** Anderson School of Management, UCLA; formerly Assistant Secretary, U.S. Treasury • **Mollie Dickenson** Author; *Worth* magazine • **Stephen Ege** Elias, Matz, Tiernan & Eric; formerly Special Assistant to the Chairman of the Federal Home Loan Bank Board • **Robert Eisenbeis** Director of Research, Federal Reserve Bank of Atlanta • **Peter Elmer** Director of Mortgage Analysis, Deloitte & Touche; formerly FDIC, RTC, FSLIC • **Catherine England** Department of Finance, Marymount University; formerly Cato Institute • **Ernest Fleischer** Blackwell Sanders Peper Martin; formerly Chairman, Franklin Savings • **James Freund** Director of Research, Research Institute for Housing America, Mortgage Bankers Association of America • **Catherine Galley** Cornerstone Research • **Peter Haje** Time Warner Inc.; formerly Paul, Weiss, Rifkind, Wharton & Garrison • **William Hamm** Law & Economics Consulting Group; formerly World Savings • **Jean Helwege** Max M. Fisher College of Business Ohio State University; formerly Federal Reserve Bank of New York • **Anne Henry** Farchmin, Ralls, Wagoner; Regulatory Watchdog; formerly Overland Park Savings & Loan • **Paul Horvitz** Department of Finance University of Houston; Shadow Financial Regulatory Committee; formerly Director of Research, FDIC; Director, Federal Home Loan Bank of Dallas • **Michael Intriligator** Burkle Center, UCLA; Milken Institute • **Edward Kane** Wallace E. Carroll School of Management, Boston College; past President of the American Finance Association • **George Kaufman** Center for Financial

Studies & Policy, Loyola University; Shadow Financial Regulatory Committee • **J. Livingston Kosberg** Chairman, Remington Partners; formerly CEO Gibraltar Savings and First Texas Financial • **William Lang** Deputy Director, Office of the Comptroller of the Currency • **Arthur Leibold** Dechert Price & Rhoads; formerly General Counsel, Federal Home Loan Bank Board • **David Malmquist** Director of Economic Analysis, Office of Thrift Supervision • **Stephen Neal** Cooley Godward; formerly Kirkland & Ellis Richard Nelson Wells Fargo; formerly Chief Economist, Federal Home Loan Bank of San Francisco • **Gerald O'Driscoll** Director, Center for International Trade & Economics, Heritage Foundation; formerly Federal Reserve Bank of Dallas • **Peter Passell** Editor in Chief, *Milken Institute Review* • **Martin Regalia** Chief Economist, U.S. Chamber of Commerce; formerly Director of Research, Savings & Community Bankers of America • **Richard Roll** Anderson School of Management, UCLA; past President of the American Finance Association; formerly Director of Mortgage Securities Research, Goldman, Sachs & Co. • **Jeffrey Scott** Vice President, Wells Fargo Bank; formerly Federal Home Loan Bank of San Francisco • **William Shear** Assistant Director, Financial Markets and Community Investment, U.S. General Accounting Office • **Lewis Spellman** Department of Finance, University of Texas • **Kenneth Spong** Federal Reserve Bank of Kansas City • **Michael Staten** Director, Credit Research Center, McDonough School of Business, Georgetown University • **Kenneth Thygeson** Digital University, Inc.; formerly CEO, Imperial Corporation of America and Freddie Mac • **Susanne Trimbath** Research Economist, Milken Institute • **Robert van Order** Chief Economist, Freddie Mac • **Kevin Villani** Economist; formerly CFO, Imperial Corporation of America • **George Wang** Director, Market Research, Commodity Futures Trading Commission; formerly Federal Home Loan Bank Board • **Lawrence White** NYU Stern School of Business; formerly Board Member, Federal Home Loan Bank Board • **James Wilcox** Haas School of Business, University of California at Berkeley; formerly Chief Economist, Office of the Controller of the Currency • **Glenn Yago** Director of Capital Studies, Milken Institute

GOVERNMENT POLICY: WERE THERE UNINTENDED CONSEQUENCES?

Government policy left S&Ls vulnerable to shifting market forces, including interest rate volatility, deteriorating asset quality and increasing industry competition. "Public policy at the time included a rigid institutional design," explained Glenn Yago, director of capital studies at the Milken Institute. "That design inhibited the ability of S&Ls to adapt to technological developments, federal and state deregulation that came after the industry was in serious trouble, and tax law changes that weakened the financial condition of savings and loan institutions by adversely affecting real estate values."

PUBLIC RECORD: WAS THERE FAIR AND ACCURATE COVERAGE?

News coverage mediates society's understanding of events and often becomes the accepted history. The media frames the coverage, promoting certain issues as problematic, certain outcomes as undesirable, and certain strategies as inappropriate. In representing the S&L industry in the 1980s, it generally failed to go beyond terms like "crisis" and "bailout," which fit into 30-second sound bites. "Catch a crook" attracted more attention than how thrifts could fulfill their historical mission to "build a house."

Martin Regalia of the U.S. Chamber of Commerce reminded the conferees that "for the most part, newspapers are not the guardians or watchdogs of our society, but just another business trying to make a buck. And that is not all bad."

U.S. S&L EXPERIENCE: ARE THERE PARALLELS IN OTHER COUNTRIES?

The problems of financial institutions in the 1980s anticipated or paralleled those of other countries. When problems occur here, U.S.

analysts prefer to look to unique circumstances or the failings of individuals. When problems occur elsewhere, they find systemic causes with simple solutions.

But what happened to the S&Ls was not so different from financial disruptions that occurred overseas both before and after the 1980s. For example, James Barth of the Milken Institute points out that "S&Ls were essentially directed toward the politically motivated investments in residential real estate." Equivalent policy-directed investments are common in other countries with state-owned or controlled financial systems.

SUMMING UP: DO S&LS PROVIDE A USEFUL PERSPECTIVE?

The 1980s witnessed the collision of vulnerable financial institutions with frenetic regulatory policy. An examination of the portfolios of institutions that invested in similar assets shows that the S&Ls were treated differently in a systematic way. Banks were underwater at the same time as thrifts, yet the banks were not closed. The seizure of S&L assets amounted to an extraordinarily large – perhaps the largest ever – nationalization of private assets.

The S&L case was more visible than other examples of policy mixing poorly with markets because government deposit insurance put the S&Ls in a very visible position. Government-insured institutions were naturally subject to political competition over who was to blame for their demise. But looking below the surface, the similarities in these conflicts generally exceed the differences.

Future roundtables in the series will focus on different forms of financial institutions and different types of asset classes. The conferences will be represented in a book series from Kluwer Academic Publishers, the Milken Institute Series on Financial Innovation and Economic Growth. 

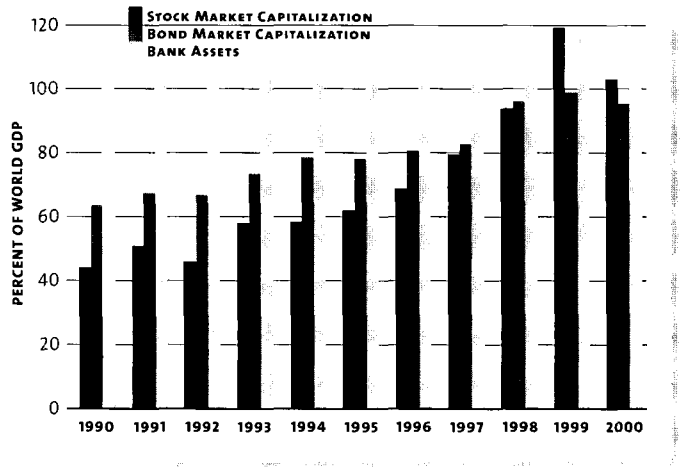
BY JAMES R. BARTH, SUSANNE TRIMBATH AND GLENN YAGO

On the eve of World War II, there were about 70 countries in the world. As of 2001, the United States recognized 191 independent states, and their political and economic diversity are mirrored by their diversity in means of channeling savings to investment. A main focus of our research in the capital studies group at the Milken Institute is measuring that diversity and assessing its impact – especially for emerging market economies trying to structure their financial systems in ways that promote economic growth and stability. Selected results from our research illustrate some of the progress we have made to date.

THE WORLD FINANCIAL SYSTEM IS UNDERGOING SIGNIFICANT CHANGES

There has been spectacular growth in the magnitude as well as the composition of financial assets relative to world GDP. Total financial assets now equal nearly 320 percent of GDP – up from about

CHANGING SIZE AND STRUCTURE OF WORLD FINANCIAL SYSTEM



210 percent in 1990. In that time stock market capitalization has reached 100 percent of world GDP, up from only about 40 percent in 1990. Bond market capitalization is also about 100 percent of world GDP, up from about 60 percent in 1990. By contrast, bank assets as a percent of world GDP have remained relatively flat, between 100 and 120 percent of world GDP.

JIM BARTH is a senior finance fellow, **SUSANNE TRIMBATH** is a research economist and **GLENN YAGO** is director of capital studies at the Milken Institute. The research described herein has benefited greatly from collaboration with Jerry Caprio of the World Bank, Dan Nolle of the Office of the Comptroller of the Currency, and Ross Levine of the University of Minnesota.

Thus wealth is increasingly flowing into stocks and bonds, not into bank deposits. This, in turn, means that securities markets, not banks, are the major source of global capital. Indeed, while bank assets worldwide were equal to the combined value of equity and bond market capitalization in 1990, today bank assets are equal to only slightly more than one-half of securities markets capitalization.

FINANCIAL SYSTEMS DIFFER WIDELY AND THE DIFFERENCES DO MATTER

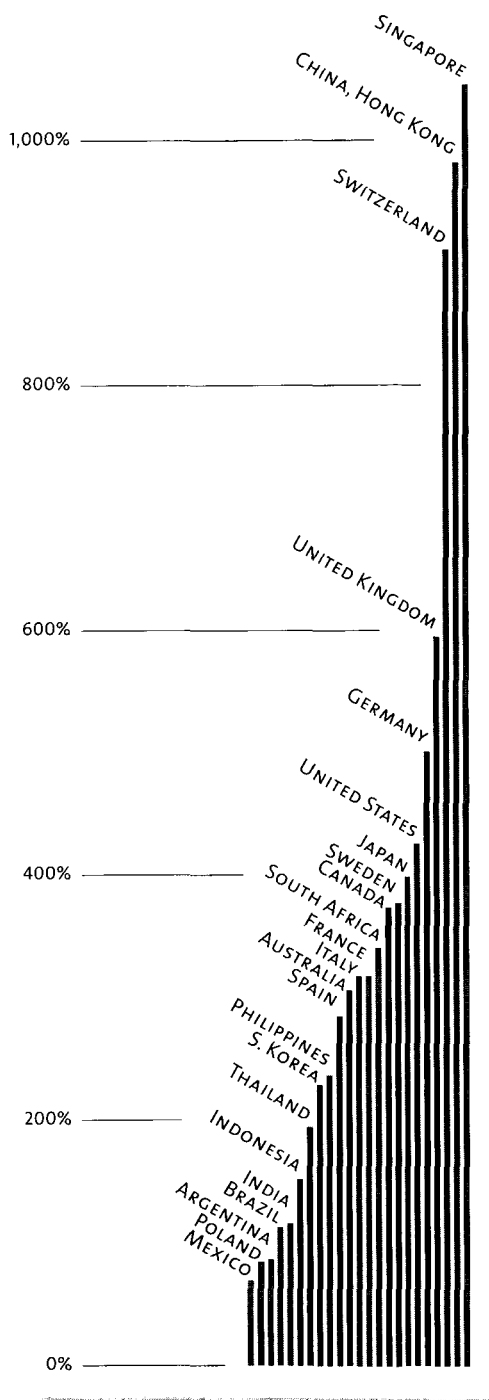
High-income countries (defined here by the World Bank categories) account for less than one-fifth of world population, but more than 90 percent of world financial assets. Meanwhile, low-income countries account for at least one-third of world population, but less than 1 percent of world financial assets. This disparity in the distribution of world financial assets is similar when disaggregated into stocks, bonds and bank assets.

Country by country the differences can be enormous, ranging from a financial system that is 70 percent the size of GDP in Mexico to one that is over 1,000 percent of GDP in Singapore.

Indeed, China's Hong Kong province, with only seven million people, has a financial system larger than either Brazil or India, which have a combined population of 1.2 billion. Germany's Deutsche Bank alone has more banking assets than the combined banking systems of Brazil, India and Indonesia.

One finds a positive and significant correlation between a country's GDP per capita and the size of its financial system as measured by the ratio of financial assets to GDP. Policymakers should therefore not impose

CROSS-COUNTRY DIFFERENCES IN BANK ASSETS, STOCKS AND BONDS AS A PERCENTAGE OF GDP



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impediments to the development of broad, deep and liquid systems.

Similar correlations hold for the individual components of financial systems – bank assets, stock market capitalization and bond market capitalization. Furthermore, banks and securities markets seem to function as complements, not substitutes, in promoting development: there is no meaningful correlation between economic development and the way financial assets are divided. Hence policymakers are advised to favor neither banks nor securities markets when promoting financial development.

By the same token, there are significant differences in financial structure among countries at the same stage of development. For example, bank assets represent over 50 percent of total financial assets in Germany, but less than 15 percent in the United States. The road to economic maturity is apparently diverse.

BANK REGULATORY AND SUPERVISORY PRACTICES DIFFER WIDELY AND DO MATTER

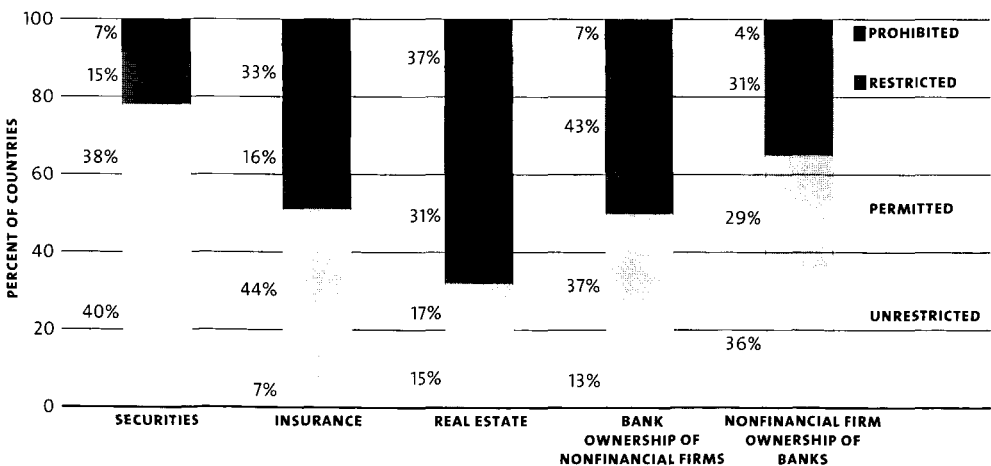
More than two-thirds of all countries have experienced a financial crisis in the past two decades. These crises have occurred in countries at all levels of income and in all parts of the world. Thus, it is understandable that policymakers feel pressure to identify the bank regulations and supervisory practices that work.

There are substantial differences among countries in the activities in which banks are permitted to engage, and the degree to which banking and commerce are allowed to mix. These government regulations are extremely important because they effectively define what a bank is.

Most countries are quite lenient with respect to letting banks engage in securities activities, but quite restrictive with respect to real estate. And few countries prohibit the integration of banking with commercial

CROSS-COUNTRY DIFFERENCES IN RESTRICTIONS ON BANK ACTIVITIES AND MIXING OF BANKING AND COMMERCE

(PERCENTAGE DISTRIBUTION OF 107 COUNTRIES BY DEGREE OF RESTRICTIVENESS)



activities. By contrast, the United States recently closed and reinforced barriers between banking and commerce, even as regulators eased restrictions on the banks' role in securities and in insurance.

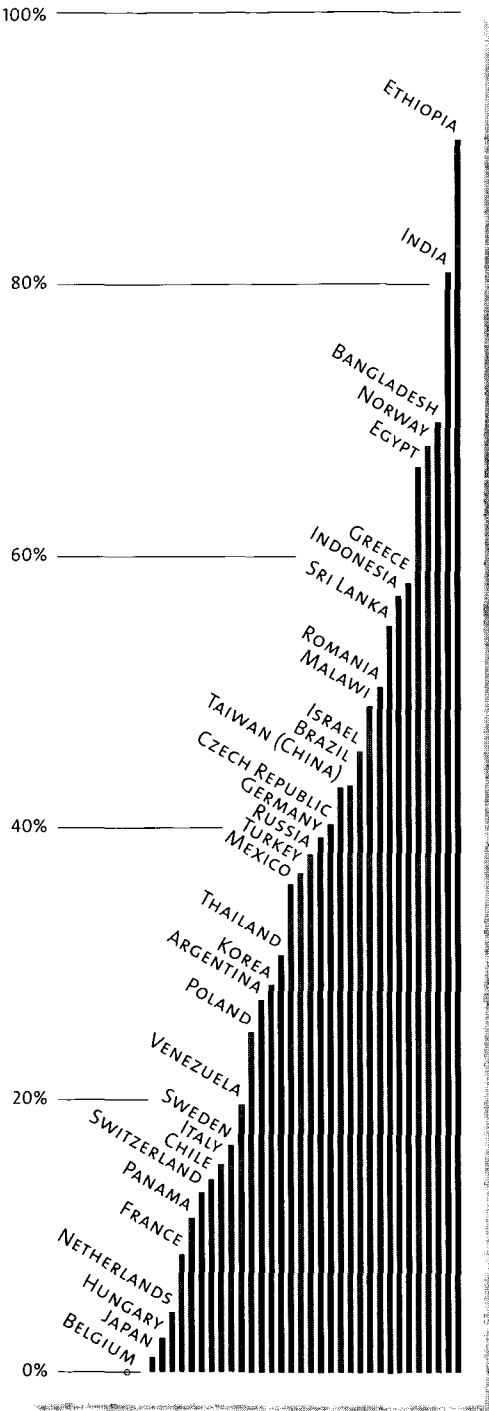
These differences are all the more striking because they seem to have considerable impact on growth prospects. One finds a strong negative correlation between economic development and the restrictions imposed on banks. Furthermore, tighter restrictions seem to increase the likelihood of banking crises. In contrast, regulations that promote diversification in bank portfolios and allow foreign entry decrease this likelihood. More generally, the evidence suggests that policy-makers would be wise to rely more heavily on private-sector monitoring to improve bank performance and stability. This includes mandating certified audits and accounting disclosures, encouraging international credit rating activity, and holding directors liable for releasing erroneous or misleading information.

GOVERNMENT OWNERSHIP OF BANKS DIFFERS WIDELY AND DOES MATTER

Government ownership of banks varies widely among countries, ranging from nil in the United States to 80 percent in India. Furthermore, in India the government is also the issuer of more than half of all bonds outstanding. At one time it was fashionable to assume that governments were best able to channel savings to appropriate investments. The predominant view today is that private markets do a pretty good job of allocating savings, and that governments should tread lightly in attempting to influence financial intermediation.

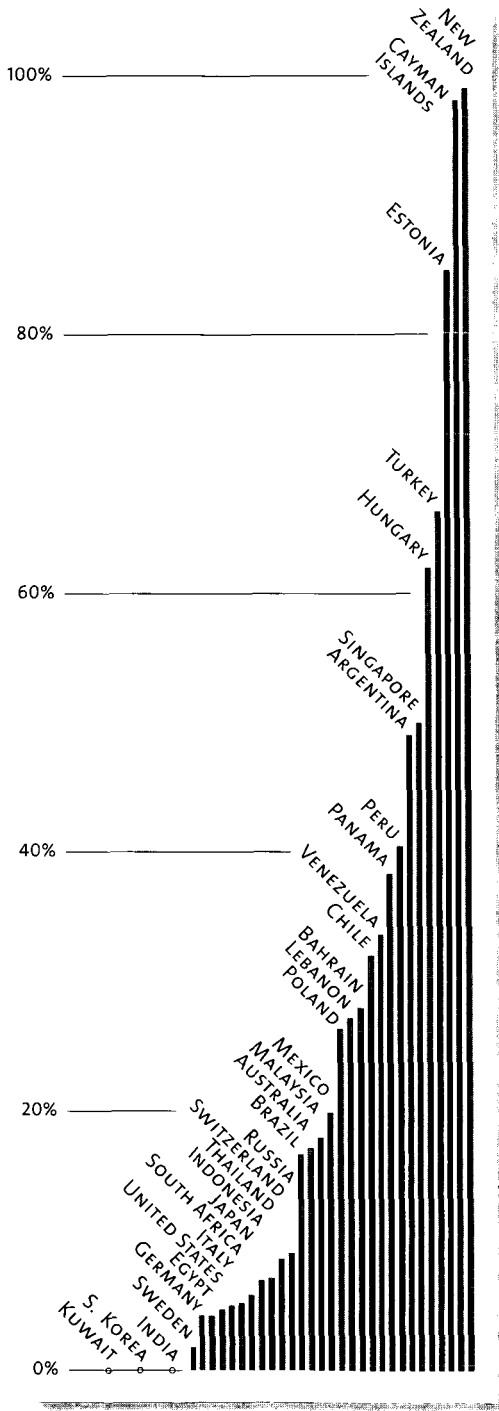
The differences in ownership are important because one finds that economic development is negatively correlated with the

PERCENT OF BANK ASSETS GOVERNMENT OWNED



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**PERCENT OF BANK ASSETS
FOREIGN OWNED**



percentage of bank assets that are government-owned. Moreover, government ownership is positively linked with bank instability. Such findings clearly indicate the benefit of privatizing banks – and why so many countries have made efforts to privatize their systems. More than \$40 billion in assets have been privatized in 25 countries since 1985. And nearly \$20 billion in assets have been privatized through cross-border mergers and acquisitions.

**FOREIGN OWNERSHIP OF BANKS
DIFFERS WIDELY AND DOES MATTER**

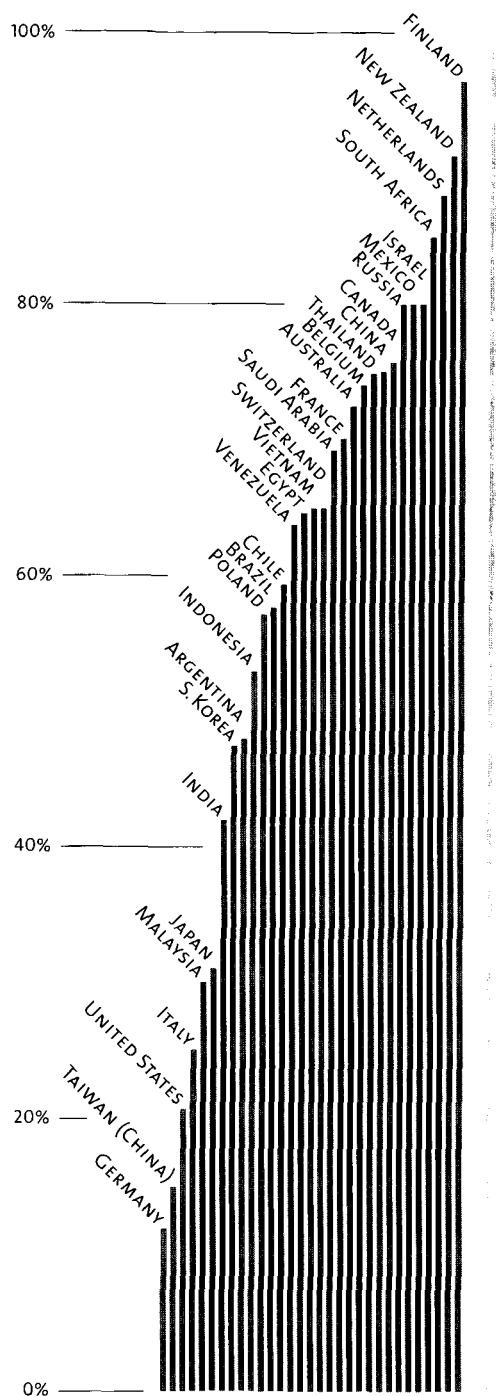
The foreign ownership of banks is quite low in mature economies like Germany, Japan and the United States. But it is even lower in poorer countries like India and Nigeria. At the other end of the spectrum, nearly all bank assets in New Zealand are foreign owned. The country has effectively outsourced its entire system – mainly to Australian banks. This raises the question of whether every country really needs a domestically owned banking system.

There is no significant correlation between economic development and the percentage of bank assets that are foreign-owned. However, the larger the number of foreign banks relative to the total number of banks, the greater the efficiency of national banking systems and the lower the likelihood of national banking crises. This suggests that foreign bank entry – not the share of foreign bank assets in total assets – tends to spur competition, which in turn makes systems less susceptible to crisis.

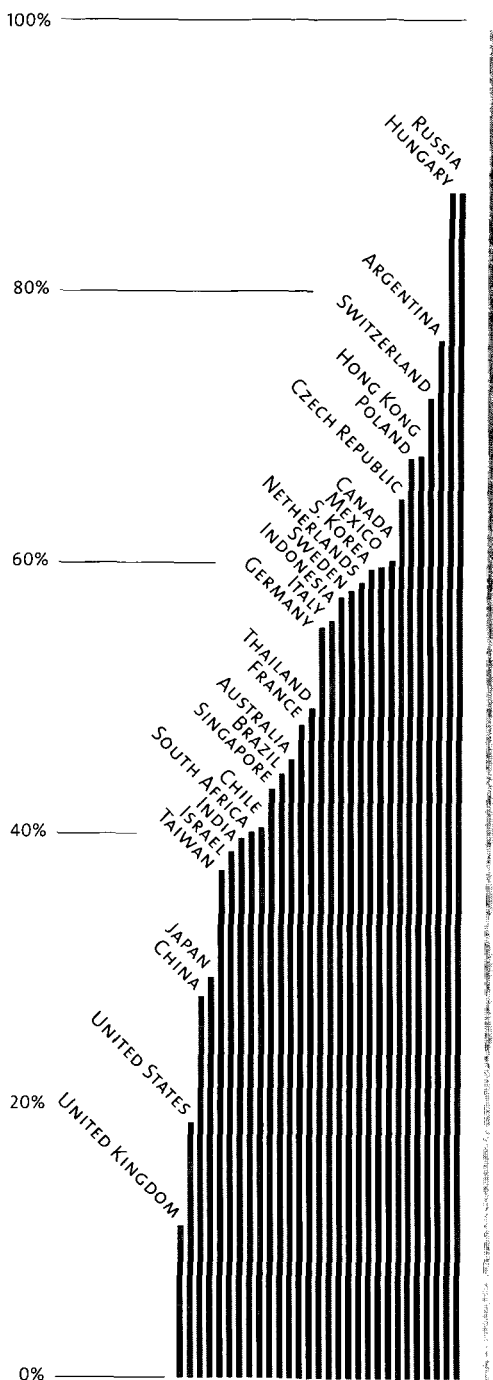
**BANK (AND STOCK MARKET)
CONCENTRATIONS DIFFER WIDELY
AND DO (AND DON'T) MATTER**

The portion of bank deposits held by the five largest institutions ranges from 12 percent in

**PERCENT OF DEPOSITS OF
FIVE LARGEST BANKS**



**PERCENT OF STOCK MARKET CAPITALIZATION
OF 10 LARGEST COMPANIES**



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2001 CAPITAL ACCESS INDEX (CAI)

COUNTRY	RANK	SCORE	CHANGE FROM 2000	COUNTRY	RANK	SCORE	CHANGE FROM 2000	COUNTRY	RANK	SCORE	CHANGE FROM 2000
United States	1	5.72	0.15	Thailand	29	4.56	0.27	Lithuania	57	3.83	0.06
United Kingdom	2	5.63	0.02	Italy	30	4.54	0.15	Brazil	58	3.77	0.17
Luxembourg	3	5.59	0.18	South Africa	31	4.47	0.11	Mexico	59	3.77	-0.09
Hong Kong	4	5.58	0.09	Mauritius	32	4.34	0.00	Indonesia	60	3.76	-0.12
Netherlands	5	5.49	0.11	Egypt	33	4.34	0.06	Pakistan	61	3.70	0.18
Switzerland	6	5.46	0.06	Hungary	34	4.34	0.06	Jamaica	62	3.62	0.14
Singapore	7	5.36	0.08	Argentina	35	4.31	-0.02	Honduras	63	3.59	0.16
Canada	8	5.25	0.17	Czech Republic	36	4.27	0.06	Moldova	64	3.56	0.00
New Zealand	9	5.14	-0.02	Slovenia	37	4.27	0.23	Ivory Coast	65	3.54	-0.04
Ireland	10	5.10	0.18	Croatia	38	4.24	0.07	Guatemala	66	3.52	0.09
Germany	11	5.09	0.15	Nicaragua	39	4.18	0.18	Colombia	67	3.51	0.02
Australia	12	5.08	0.08	Estonia	39	4.18	0.15	Romania	68	3.48	-0.06
Finland	13	5.04	0.19	Morocco	39	4.18	0.02	Turkey	69	3.48	-0.12
Sweden	14	5.02	0.09	China	42	4.17	-0.02	Costa Rica	70	3.46	-0.14
Taiwan	15	5.00	0.05	Namibia	43	4.16	0.00	Vietnam	71	3.42	0.16
Spain	16	4.90	0.10	Peru	44	4.10	-0.06	Armenia	72	3.40	0.20
Japan	17	4.85	0.22	Bolivia	45	4.08	0.22	Bulgaria	73	3.39	0.21
France	18	4.81	0.04	Jordan	46	4.04	0.04	Venezuela	74	3.33	0.07
Belgium	19	4.79	0.21	Philippines	47	4.04	-0.06	Paraguay	75	3.30	-0.07
Denmark	20	4.78	0.04	Tunisia	48	4.04	-0.15	Kazakhstan	76	3.29	0.18
Austria	21	4.77	0.04	Latvia	49	4.03	0.10	Zimbabwe	77	3.24	0.02
Israel	22	4.74	0.16	Botswana	50	4.00	-0.08	Ecuador	77	3.24	-0.23
Portugal	23	4.74	0.23	Slovak Republic	50	4.00	-0.09	Kenya	79	3.24	-0.03
Chile	24	4.72	-0.02	Nigeria	52	3.96	0.00	Uruguay	80	3.07	0.07
South Korea	25	4.64	0.19	El Salvador	53	3.89	-0.11	Ghana	81	2.92	-0.08
Malaysia	26	4.63	-0.14	Greece	54	3.87	0.21	Russia	82	2.85	0.19
Norway	27	4.62	-0.09	India	55	3.85	0.33	Ukraine	83	2.61	0.16
Iceland	28	4.56	0.14	Poland	56	3.84	0.04				

Germany to 100 percent in Botswana and Gambia. Similarly, the market capitalization of the 10 largest companies accounts for 19 percent of the total stock market cap in the United States, and 100 percent in Zambia.

The impact of concentration seems to be mixed. There is a negative correlation between economic development and bank concentration, but no significant correlation between economic development and stock market concentration.

COMPOSITION OF BOND MARKETS DIFFERS WIDELY AND DOES MATTER

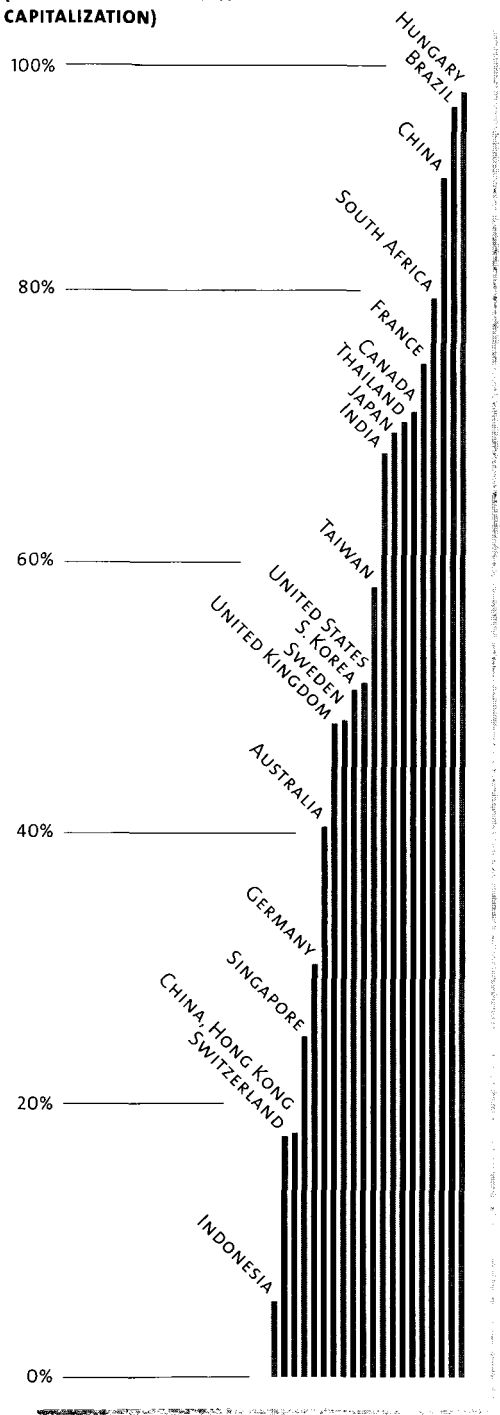
In Hong Kong and Singapore government bonds represent a small share of total bond

market capitalization. By contrast, government bonds dominate the markets of Brazil and Hungary. We found a negative correlation between economic development and the share of government bonds in total bond market capitalization. The lesson: policy-makers should take care to eliminate impediments to the development of private bond markets – including private venture capital markets.

NUMBER OF STOCK EXCHANGES AND CROSS-BORDER LISTINGS DIFFERS WIDELY

Equity exchanges facilitate the raising of capital by firms and enhance the liquidity of

**GOVERNMENT VS.
NONGOVERNMENT BONDS**
(PERCENT OF TOTAL BOND MARKET
CAPITALIZATION)



**CROSS-BORDER LISTINGS ON SELECTED
STOCK EXCHANGES, 2000**

COUNTRY	TOTAL	DOMESTIC	FOREIGN
Argentina	125	122	3
Australia	1,406	1,330	76
Austria	111	97	14
Bermuda	47	22	25
Brazil	467	464	3
Canada:			
Canadian Venture Exchange	2,598	2,494	104
Toronto	1,421	1,379	42
Montreal	128	127	1
Chile	261	260	1
Denmark	235	225	10
Europe:			
Euronext Amsterdam	392	234	158
Euronext Paris	966	808	158
Euronext Brussels	265	161	104
Finland	158	154	4
Germany	989	744	245
Greece	310	309	1
Hong Kong	790	779	11
Indonesia	286	286	0
Iran	285	285	0
Ireland	96	76	20
Israel	665	664	1
Italy	297	291	6
Japan:			
Tokyo	2,096	2,055	41
Osaka	1,310	1,310	0
Korea	702	702	0
Luxembourg	270	54	216
Malaysia	790	787	3
Malta	14	14	0
Mexico	177	173	4
New Zealand	200	144	56
Norway	215	191	24
Peru	227	209	18
Philippines	230	228	2
Poland	225	225	0
Portugal	110	109	1
Singapore	480	417	63
Slovenia	149	149	0
South Africa	606	583	23
Spain:			
Madrid	1,036	1,019	17
Barcelona	583	577	6
Valencia	459	454	5
Bilbao	307	304	3
Sri Lanka	239	239	0
Sweden	311	292	19
Switzerland	416	252	164
Taiwan	531	531	0
Thailand	381	381	0
Turkey	316	315	1
United Kingdom	2,374	1,926	448
United States:			
NASDAQ	4,734	4,246	488
NYSE	2,862	2,429	433
AMEX	649	599	50
Chicago	7	7	0

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publicly traded securities. Yet, it is far from clear that every country needs its own stock exchange. There now are more than 100 stock exchanges around the world, and more than 30 countries have created stock exchanges in the past decade. By contrast, the United States had 100 regional stock exchanges in 1900, 35 in 1935, 15 in 1964 – and has only seven today.

Countries differ widely, moreover, in both the number of exchanges and the number of cross-border listings on each exchange. Stock exchanges everywhere compete to attract foreign listings and the trading volume and revenue generating activities that go along with internationalization. Greater consolidation and integration may be appropriate both within and across national borders. Indeed, improvements in telecommunications technology probably make the globalization of trading networks both inevitable and desirable.

ENTREPRENEURIAL ACCESS TO CAPITAL DIFFERS WIDELY AND DOES MATTER

The degree of financial diversity among countries is partly responsible for differences in the ability of entrepreneurs to gain access to external funds. We have constructed a Capital Access Index (CAI), based on various quantitative and qualitative variables. It currently covers countries accounting for 98 percent of world output and 83 percent of world population. Overall, global access to capital is improving: more countries achieved higher scores in the 2001 CAI than in the previous year.

Yet, the index shows that countries differ widely. This is important because there is a positive correlation between economic development and the CAI. **M**

The Global Financial Underclass

Some 30 countries with a total population exceeding 400 million have severely underdeveloped financial systems, and by no coincidence have not received any private, long-term, nonguaranteed external credit since 1970. This should be a matter of global concern since the problems of these failing economies often spill beyond their borders. Specifically, they are exceptionally vulnerable to acts of war, terrorism and mass migration.

POPULATION (2000; thousands)			POPULATION (2000; thousands)		
COUNTRY		TRANSNATIONAL AND DOMESTIC ISSUES	COUNTRY		TRANSNATIONAL AND DOMESTIC ISSUES
Algeria	30,399	Ongoing civil war between Islamic terrorists (Armed Islamic Group aka Al-Jama'ah al-Islamiyah al-Musallah) and military government	Haiti	7,959	Dictatorship of the Duvaliers ended in 1990; a military dictatorship in 1994; currently an unstable nominal democracy
Barbados	268	Currently stable; multiparty democracy	Laos	5,216	Communist dictatorship since 1975 seizure of power by Pathet Lao Communist militants; major heroin production center
Benin	6,284	Former Marxist-Leninist military dictatorship; returned to democratic rule in 1991	Lesotho	2,154	Former military dictatorship, returned to civilian rule in 1998
Botswana	1,602	Currently stable; multiparty democracy	Liberia	3,130	Ongoing terrorist activity in the guise of the United Liberation Movement for Democracy in Liberia
Burkina Faso	11,274	Failed coup 2001, ongoing and rising border tensions with Chad	Madagascar	15,423	Socialist dictatorship ended in 1992; currently multiparty democracy
Burundi	6,807	Hutu and Tutsi tribes engaged in long-running violence/civil war; Hutu militants attacked capital December 2001	Mali	10,840	Dictatorship ended in 1992; currently multiparty democracy
Central African Republic	3,597	Former dictatorship returned to civilian rule in 1990s; recent turmoil includes 2001 coup attempt	Mauritania	2,669	Effectively one-party state, ongoing tensions between Arab Berber and black populations
Chad	7,694	Ongoing and rising border tensions with Burkina Faso; fought border war with Libya in 1980s	Myanmar	45,611	Ongoing civil war between SLORC (State Law and Order Restoration Council) military junta and various opposition/minority groups, important heroin production center
Comoros	558	More than 20 coups or attempted coups since 1975, most recently in December 2001; military chief Colonel Assoumani seized power in 1999	Nepal	23,920	Ongoing Maoist uprising in rural areas, king recently assassinated by family member
Democratic Republic of Congo	51,390	Recently involved in large-scale civil war involving Namibian, Rwandan, Ugandan and Zimbabwean troops; violence appears to be abating and most foreign troops withdrawing	Rwanda	8,508	Hutu and Tutsi tribes engaged in long-running violence/civil war; recently involved in Congolese civil war
Congo	2,936	Formerly Marxist-Leninist dictatorship, democratically elected government installed in 1992; civil war in 1997 allowed former Communist dictator Sassou-Nguesso to seize power	Samoa	169	Currently stable; constitutional monarchy
Djibouti	660	Three-year uprising by ethnic Afars rebels ended in 1994; currently stable	Sierra Leone	5,031	Ongoing civil war; Revolutionary United Front insurgents recently signed ceasefire with government
Equatorial Guinea	454	Dictatorship of Nguema overthrown in 1979 after 1/3 of population forced to flee; nominal democracy since 1996 with leader of 1979 coup reportedly winning 99% of votes polled	Somalia	9,711	Civil/tribal war since collapse of Siad Barre regime in 1991. Somalia no longer exists de facto. At least three successor states: Somaliland in north-west, Puntland in north-east, and a small region controlled by a provisional government around Mogadishu
Ethiopia	64,298	Somali militants active in Ogaden region (Ogaden National Liberation Front); Ethiopian army recently fought border war with Eritrea and launched attacks on alleged Islamic terrorists in former Somalia in 2001	St. Vincent & the Grenadines	115	Currently stable; multiparty democracy
Gabon	1,237	Currently stable; multiparty democracy	Swaziland	1,045	Slowly reforming monarchy
Gambia	1,286	Former dictatorship from 1994 to 1996, currently nominal democracy although 2000 saw failed coup attempt	Syria	16,110	Engaged in war with Israel through its Hezbollah proxy, shelters (in Syria and Syrian-controlled Lebanon) Popular Front Liberation of Palestinian-General Command (PFLP-GC) Palestinian Islamic Jihad (PIJ), Hamas
Grenada	98	Socialist dictatorship overthrown by United States in 1983; currently stable; multiparty democracy	Togo	4,670	Nominal democracy that is effectively a military dictatorship, most bilateral and multilateral aid to Togo remains frozen
Guinea	7,418	Ongoing incursions by Liberian and Sierra Leonean terrorists	Uganda	22,063	Recently involved in Congolese civil war; Islamic terrorists in guise of Allied Democratic Forces involved in recent attacks on foreign/Ugandan nationals
Guinea-Bissau	1,207	Former Socialist dictatorship; 1994 returned to civilian rule that was ended in 1998 by coup that resulted in civil war, new elections and apparent stability in 2000			

HOWARD DAVIES/CORBIS

Ready for a good laugh?

Don't hold your breath: Economics just isn't a very funny profession. But as part of our selfless effort to put a human face on the dismal science, the worldwide staff of the Milken Institute Review (me) has spent countless hours (sure...) combing the Internet for side-splitters. Actually, many of the jokes about economists are just relabeled gags about the moral failings of lawyers or the charmlessness of accountants:

• **A mathematician**, a statistician and an economist apply for the same job. The interviewer calls in the mathematician and asks, "What do two plus two equal?"



"Four," he replies.

The interviewer calls in the statistician and again asks, "What do two plus two equal?"

The statistician says "On average, four – give or take 10 percent."

Then the interviewer calls in the economist and poses the same question.

The economist locks the door, closes the shades and responds, "What do you want it to equal?"

• **A woman hears from her doctor** that she has only half a year to live. The doctor advises her to marry an economist and to live in South Dakota.

Woman: Will this cure my illness?

Doctor: No, but the half year will seem pretty long.

Many others are meant strictly for insiders:

• **Three econometricians go hunting**, and encounter a deer. The first econometrician fires, but misses by a foot to the right. The second econometrician fires, but misses by a foot to the left.

The third econometrician doesn't fire, but whoops in triumph, "We got it! We got it!"

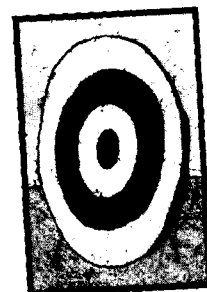
• **Did you hear** of the economist who dove into his swimming pool and broke his neck? He forgot to seasonally adjust his pool.

But once your standards begin to slide, a few do seem witty:

• **How many** Chicago School economists does it take to change a light bulb?

None. If the light bulb needed changing, the market would have already done it.

• **An economist** is a trained professional paid to guess wrong about the economy. An econometrician is a trained professional paid to use computers to guess wrong about the economy.



My own favorites, though, aren't about economists, but about economics – in particular, about the transition to capitalism:

• **Reporter:** If you had two houses, would you give me one?

Communist: Of course, yes!

Reporter: If you had two cars, would you give me one?

Communist: Of course, yes!

Reporter: If you had two shirts, would you give me one?

Communist: Of course, no!

Reporter: Why "no" this time?

Communist: Because I have two shirts!

• **New Russian proverb:** Everything the Communists told us about communism was a complete and utter lie. Unfortunately, everything the Communists told us about capitalism turned out to be true.

Think you can do better? E-mail me at: ppassell@milkeninstitute.org. – Peter Passell



MILKEN INSTITUTE



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